EFFECT OF INCREASED SOCIAL MEDIA NETWORKING DUE TO COVID-19 OUTBREAK ON THE SPAN OF ATTENTION IN ADOLESCENTS IN PAKISTAN

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ABSTRACT

The coronavirus 2019 (COVID-19) pandemic has led to new national policies including national school closures, lockdowns, and social distancing recommendations that may translate to higher overall screen time among adolescents, especially with their education system shifting to the online systems. Excessive screen time is associated with a decreased span of attention because it increases the sedentary time and is associated with a poor sleep cycle leading to attention and concentration problems. Keeping in view the prevalent problem that has led to inattention issues in college students, this study is designed to statistically calculate the correlation between the two constructs. 300 participants from various colleges were included from over 3 cities of KP. The data was collected online through Google Forms by approaching them individually. The results were promising and showed a significant correlation between high screen time and inattention among college students.

KEYWORDS

Excessive screen time, inattention, adolescents, COVID-19 outbreak, concentration

problem

INTRODUCTION

Since December 2019, the world has been facing a new crisis, labialized as COVID - 19 pandemic by WHO. First detected in Wuhan, China, the disease swiftly spread and impacted the entire world's population. As a result of its quick spread and a jump in incidences of infection and deaths that followed, the medical field is in a state of panic. Different countries, including Pakistan, are adopting a range of strategies to prevent the spread of illness. Quarantine for tourists and social separation are among the measures being imposed in Pakistan, as are prohibitions on public meetings, closing down educational institutions, and directing people to work from home. Businesses, schools, hospitals, and tourism destinations all suffer as a result of these regulations.

Due to the COVID-19 epidemic, students in Pakistan have immensely increased the use of computers, laptops, tablets, and smartphones for educational purposes and other leisure activities, for instance, taking formal online classes, communicating with friends, and doing homework. Students' physical and mental health suffers, as a result, making difficulties in concentration, focus, and attention.

There is a continuous increase in the screen time spent in front of electronic devices such as computer screens, mobile phones, or television. Children's increasingly sedentary lives concern parents. The adverse effects of increased screen time on the mental health of children and adolescents are largely being investigated by educators, mental health practitioners, and researchers.

LITERATURE REVIEW

The literature shows growing rates of negative health outcomes due to increased use of screen time in the current pandemic. A study in Canada found out that, 74 percent of mothers, 61 percent of fathers, and 87 percent of children watched more television than they had in the past (Carroll et al., 2020). Another study upon 1033 Chinese participants indicated that 70% among them spent more time in front of screens after the outbreak of COVID-19 (Hu et al., 2020). Furthermore, participants of a longitudinal study, designed to assess changes in health behavior due to COVID-19, showed a significant increase in their screen times (Keel et al., 2020). Similarly, a polish study showed that 49 percent of participants had an increase in screen time during pandemic (Gornicka et al., 2020). Another study, encompassing 4108 people from nine European nations afflicted by covid-19, reported a major 65 percent uplift in the amount of time spent in front of screens (Pisot et al., 2020). According to the abovementioned studies, screen time is on the rise widely. The impacts of this trend on public health around the world need to be studied further. Researchers found a strong correlation between excessive use of screen time and self-perceived

concentration deficits among 4816 French high school pupils of ages 18 and above. This advocates a significant association between screen time and inattention (Montagni et al. 2016). Excessive usage of screens by children and teenagers has been related to various health, and behavioral difficulties, such as mood swings, obesity, and violent behavior. Moreover, it has also been found to be negatively affecting cognitive, linguistic, and attention span development (Carson & Janssan, 2012).

There has been a significant increase in screen options in recent times, and the rising trend in screen time exposure has led to substantial consequences. A study was conducted among preschoolers that reported an association between excessive screen time and inattention problems. (Tamana et al. 2019). Attention plays a significant role in almost every area of life including school, work, and relationships. The attention process enables us to focus on the most important and relevant components of a scenario. Consequently, we can draw maximum results from the minimum time and energy devoted to a clear understanding of the moment or mastering a skill. A developmental study conducted on a US representative sample of 11,875 children (9-10 years of age), concluded that exposure to screen time is positively linked to behavioral and anger issues along with an increase in cognitive deficits.

Multiple negative health outcomes have been related to excessive screen usage in diverse populations across the globe. There is a variety of studies available that show screen time is associated with ophthalmological effects. A meta-analysis of 15 studies having a sample of 49789 children indicated an odds ratio OR 1.02 of myopia (Lanca &Saw, 2020). A vast majority of scientific studies report an association between higher exposure to screen and an increased risk of non-communicable diseases. To illustrate, a meta-analysis of 16 studies concluded that children who spent more than two hours a day in front of a screen were 1.67 times more likely to be overweight or obese than those who spent less time, a new study suggests (Fang, Mu, Liu, & He, 2019). Furthermore, there is a positive correlation between the amount of time spent watching television and the development of hypertension and type 2 diabetes. However, Obesity was found to have a non-linear relationship among adult participants (Guo et al., 2020). It also reported an increased 6% risk of hypertension and 8% of type 2 diabetes with each added hour of television viewing. Also, the risks of non-communicable diseases were linked with sedentary activities that increase screen time.

Non-active video gaming and body mass were studied in a meta-analysis of 20 studies with 32 effect sizes (Marker, Gnambs, & Appel, 2019). It showed a positive link between the constructs studied. Different evidence-based reviews show that elevated screen time has mental health impacts. Increased screen usage has been associated

with a higher risk of depression according to a meta-analysis of 12 cross-sectional and 7 longitudinal studies (Wang et al., 2019).

Another 31 studies review reported poorer sleep outcomes in infants, toddlers and preschoolers to be associated with screen time (Janssen et al., 2020). It also concluded that the mental health problems related to screen time may not be dependent on the quantity of time spent using screens, rather on the quality and content being consumed by individuals. A meta-analysis of 43 studies comprising a sample of 31162 participants revealed post-traumatic stress and acute stress reactions to be associated with exposure to mass trauma media coverage (Pfefferbaum, Nitiema & Newman, 2019). Research studies discussed above have helped us to better understand how such screen time patterns in the current pandemic have been connected to a variety of health outcomes.

Post-pandemic research showed an increasing trend in screen-based media usage, having significant physical and mental health outcomes. Consequently, non-communicable diseases have been proven to be an additional burden during a covid-19 outbreak. In the absence of action, the health risks associated with increased screen usage will be unavoidable. A deeper knowledge of the health concerns due to excessive screen use is vital to develop appropriate rules, guidelines, and treatment options to minimize its hazardous effects. Digital screen time is a global issue that has not been studied in low and middle-income countries. International research collaboration to address COVID-19's common public health challenges can assist in developing global knowledge and practices (Sultana et al., 2021). Screen-time research requires a multi- disciplinary team of researchers to better understand the epidemiological differences between groups.

Many studies were conducted to assess the screen time in children and young population during the COVID-19 pandemic and pre- pandemic time (Janssen et al., 2020; Stiglic & Viner, 2019), and postulated that individuals falling in either category are at higher risk of increased exposure to a screen with lesser self-control resulting in long-term consequences. Hence, it has become the need of the hour to determine the safest screen- time allowances for specific age groups through evidence-based consensus among pediatricians, general practitioners, parents, teachers, social workers, and those concerned.

Screen use patterns may be similar amongst working professionals and other groups, and these groups may benefit from similar measures. The detection of such trends and underlying psychosocial issues connected with screen use may make it possible to create and accept common strategies to deal with growing screen time and associated health impacts. Interventions that take into account screen quality and

quantity may be necessary as a precaution. The rate at which individuals use their screens when watching television, for example, may differ from the rate at which people use their smart devices for social networking. As a result, mass media and the internet should be used to provide health information to a diverse group of people who have various levels of exposure to screens. Fractions of people with varying screen time may demand individualized treatment to combat unhealthy screen use (Ahasan, Alam, Chakraborty & Hossain, 2020). For people who are at home and participating in online sessions, a variety of techniques, such as limiting screen-based educational or institutional activities and designing exercises that integrate offline interactions and activities, may be effective. (Wierderhold, 2020).

A healthy lifestyle, improved nutrition, and participation in healthy activities that could benefit one's health and well-being should be promoted along with raising awareness about the dangers of excessive screen time. This can be done through both digital and more traditional means (Duan & Zhu, 2020; Sarbadhikari, 2020). While enabling environments to be off-screen with in-person physical and psychosocial activities, it should be made sure not to sacrifice COVID-19 safety regulations and other protocols. It is imperative to the public's health that this year's COVID-19 conferences focus on enhancing social, capital, and community health elements that contribute to long-term mental and physical well-being (Rodela, sultana, Mckyer, Bhattacharya, & Hossain,2020). Interventions that are culturally relevant and based on scientific knowledge are also crucial. Organizations and scientific societies on all levels i.e. local, national, and global can play an important role in the formulation of multi-level strategies that promote healthy screen use choices for individuals and populations by offering up-to-date knowledge and proposals that should be widely communicated (Nagata, Abdel Magid, & Pettee Gabrial, 2020; Wiederhold, 2020).

A cross-sectional study was conducted on children in China, to assess screen time, the socio-demographic characteristics of children were acquired by parental questionnaires, and concluded that the detrimental factor for development and inattention is associated with excessive screen time (Xie et al., 2020). Here are the brief definitions of variables used in the study, attention is the cognitive and behavioral process of selective concentrating on a discrete aspect of information, whether considered subjective or objective while ignoring other perceivable information. (Wikipedia). It helps us in the process of planning, regulating, and monitoring our thoughts and actions, so it is considered an initial and crucial step in learning because without the process of attention we cannot understand, learn, and remember things.

Screen time is the length of time spent using a device with a screen such as smartphones, computers, television. While the transitional phase of development between childhood and adulthood, in which physical and psychological changes occur

in the individuals. These changes are usually associated with teenage years but their psychological and cultural expressions may begin earlier and end later.

Research has been conducted to develop a better understanding of screen time association with inattention problem and different psychological issues but the research to see the association between the above two variables are rare. It is essential to study the relationship between social media networking on students' attention span in COVID -19 pandemic because it affects students' performance in various ways. This is exploratory research to find out the attention span being negatively affected by the increased screen-time of students due to online education and vacations in the COVID Pandemic. There is plenty of literature supporting the effect of screen time on attention span but no literature directly linking the COVID pandemic with it.

RESEARCH OBJECTIVES

- 1. To determine the social networks usage among adolescents during the COVID-19 pandemic in Pakistan.
- 2. To evaluate the decreased/ affected span of attention in adolescents due to increased screen time.
- 3. The present study aims to explore the effects of increase social networking in the wake of the COVID-19 outbreak on adolescent's span of attention.
- 4. To further address the risk of the decreased span of attention on the academic grades of students.

RESEARCH OUESTION

1. What are the impacts of excessive screen time exposure upon students' span of attention during the outbreak of the COVID- 19 pandemic?

RESEARCH HYPOTHESIS

- 1. High scores on Social Media Addiction Scale (SMAS) will result in low scores on Moss Attention Rating Scale (MARS) and vice versa.
- 2. There will be a negative correlation between social networking and the span of attention.
- 3. Students having social networking time less than 6 hours will have a better span of attention than those having more than 6 hours of screen engagement.
- 4. Females will have a higher score on Social Media Networking Scale.
- 5. Males will have a lesser span of attention as compared to females.

RESEARCH METHODOLOGY

Sample

A convenience sampling technique was used to collect the data. The sample consists of two hundred and ten adolescents (college students), 150 girls and 173 boys, their

age ranges from fifteen years to eighteen years. Their educational level is intermediate. The data was collected online through Google forms by approaching inter-level students from December 2020 to February 2021. The sampling areas were Peshawar, Kohat, Islamabad, and Lahore.

Inclusion criteria

- 1. College students with grades of 1st year and 2nd year or equivalent qualification.
- 2. Adolescents between the age range of 15-18 years.
- 3. Adolescents between the age range of 15-18 years who are seeking formal education from any institute (private or government).

Exclusion Criteria

- 1. Adolescents who are below and above the expected age ranges.
- 2. An adolescent lies within the expected age range but they are not college students.

Individuals with expected age range but are not seeking formal and informal education

Instruments

For data collection, the following instruments were used.

1. Informed consent

Informed consent was shared with the participants, if they are agree to take part in the research, further demographic sheets and study instruments were shared with them. The informed consent consists of the purpose of the study, confidentiality was shared.

2. Demographic Information Sheet

The socio-demographic data were collected on age, gender, educational level, area of belonging. Participants were also asked about consumption and time spent on screen daily since the outbreak.

3. Social Media Addiction Scale-Student form (SMAS-SF)

It is a self-report tool containing 29 items that assess students' level of addiction on social media, students were asked to read these statements and rate the frequency of the intensity. Ratings are made on 5 5-point Likert-type scale from strongly disagree to strongly agree. A higher score indicates a more severe addiction. The validity and reliability of the scale were seems good and reliable tests for the measurement of social media addiction for students.

4. The Moss Attention Rating Scale

It is a self-report inventory that consists of 22 items used for the measurement of the attention span of students. Participants were informed to rate each statement as it suits their preferences on a five-point Likert format scale ranging from 1 (definitely false) to 5 (definitely true). The validity and reliability of the instrument were good.

Procedure

Data was collected after approaching students of the respective age range online. For data collection, the informed consent along with the demographic information sheet and two scales i.e. Social Media Addiction Scale (SMAS) and Moss Attention Rating Scale (MARS) were sent to the participants explicitly after agreeing to take part in the research. The respondents were informed to complete the questionnaires as honestly as possible and make sure to give a response on every item. There was no time limit for the completion of questionnaires as they were allowed to complete them on their ease. After the collection of data, the data shifted from Google forms to SPSS Packages for the analysis. Pearson correlation test was used to compute the correlation between variables. The data was collected from December 2020 to February 2021.

DATA ANALYSIS AND RESULTS

The statistical packages for social science are used for the analysis of data.

Table 1: Demographic Characteristics of Participants

| Demographic | N | % |
|----------------------|-----|------|
| characteristics | | |
| Age | 273 | 98.2 |
| 15 | 15 | 5 |
| 16 | 54 | 18 |
| 17 | 117 | 39 |
| 18 | 77 | 25.7 |
| 19 | 11 | 3.7 |
| Gender | | |
| Female | 150 | 54.9 |
| Male | 123 | 45.3 |
| Education level | | |
| Ist year | 179 | 59.7 |
| 2 nd year | 75 | 31.7 |

Note. N=273 (n= 123 for males and 150 for females). The sample average age is 16.8.

Table 2: Descriptive statistics of scales

Psychometric properties of SMAS and MARS scale

| Scales | M | SD | Range | Cronbach 's |
|--------|---|----|-------|-------------|
| | | | | |

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Effects on increased...

| SMAS* | 56.1 | 18.8 | 82 | .93 |
|--------|------|------|----|-----|
| MARS** | 69.5 | 8.7 | 73 | .63 |

Note. SMAS* (social media addiction scale).MARS** (Moss attention rating scale)

Table 3: Table of correlation

Descriptive Statistics and Correlations for Study Variables

| Variable | n | M | SD | 1 |
|----------|-----|------|------|-----|
| MARS | 273 | 69.5 | 8.74 | |
| SMAS | 273 | 56.1 | 18.8 | .13 |

The sample Pearson correlation coefficient r=.013, this correlation indicates that there is an increasing trend (relationship) between increased screen time and span of attention. Furthermore, the p-value =.013 is less than the conventional level, so we reject the null hypothesis and conclude the linear relationship between increased screen time and span of attention. Statistically significant that is a student's span of attention is decreased due to increased screen time.

DISCUSSION

A growing body of literature concerns the rising trends of screen time and its associated health outcomes during the COVID-19 pandemic. The researches have proven to form a relationship between screen time and intention issues. Also, the use of social network sites has gained momentum due to the sedentary lifestyle and restrictions imposed to fully follow the SOPs given by WHO. This has given a boost to the increased screen time especially in adolescents because of ceased physical activities including shopping, outing, dining out, sports, schools, and several others. This has led to the idea that poor or decreased school performances reported might be having increased screen-time as the main factor as the college students mainly increased their social site activities. This has been linked to their decreased span of attention leading to an inability to gain the same flow and learning/reproducing capacities manifested after rejoining the colleges. According to this study conducted, the results obtained are largely significant showing a strong negative correlation between high scores on the social networking scale and significantly low scoring on the Attention Scale. These results were immensely being anticipated linking the previous literature highly supporting the jump in the use of social network sites during a pandemic and that in turn affecting the span of attention of adolescents.

RECOMMENDATIONS

In the light of these results, colleges should take definitive measures to focus on the major issue students are facing negatively affecting their performance. Their ability to listen, comprehend, retain, and reproduce all depend on the construct of attention. The colleges should ensure an equal time and task distribution between physical and digital

tasks for both on and off-campus assignments. Furthermore, increased screen time has also been related to poor sleep patterns. Several studies including those based on neurology have put forth the notion that the blue light component during the screening time impacts the body's circadian rhythm negatively affecting the sleep patterns and problems in sleep initiation. This can also be concluded in the light of these studies that the poor sleep pattern and sleep cycle issues prove to be a hindrance in a good span of attention. Adding to the current views, Inattention is also associated with hyperactivity resulting in agitation and irritable behaviors among adolescents. If not timely supervised and controlled, this one issue can lead to several health and behavioral problems. Also, a whole lot of research has given plenty of evidence linking the increased screen-time and poor health conditions including muscular, myopia, and vital organ diseases. This helps us to conclude that poor health conditions can be extremely hazardous in times of COVID Pandemic as the weaker immune system can be deadly according to the experts. Parents can be also instrumental in supervising the screen-time and encouraging adolescents to take part in physical activities.

The data was not a good representation of the three cities. It cannot largely be generalized as several researches are suggesting an insignificant correlation between screen-time and span of attention. Moreover, as there has been no statistical data available as to how many students have reported disengaging widely from physical activities during a pandemic in Pakistan, and the increased social networking, the study was unable to make meticulous conclusions. Also, as the data has been collected online so the researcher could not administer the form properly motivating the pupil to complete it with all attention. Keeping in mind the inattention being prevalent among students, the responses are also anticipated to be filled with lesser attention in questions at the end.

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