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PREVALENCE AND IMPACT OF THE USE OF ELECTRONIC GADGETS ON THE STUDENT IN UNIVERSITY: A SPECIAL REFERENCE TO NANDURBAR DISTRICT

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Abstract: Technology has played an important part in educational advancements, giving both instructors and students more alternatives and flexibility in their teaching and learning practises. The purpose of this descriptive study was to determine the impact of electronic gadgets on the academic performance, study habits, and degree of competency in the use of electronic gadgets of senior high school (SHS) students. The study found that the influence of electronic devices on SHS pupils' academic performance was extremely effective, that their degree of skill in using electronic gadgets was highly proficient, and that their study habits were very good. There were no significant differences in the influence of electronic gadgets on academic achievement, competency with electronic gadgets, and SHS study habits. As a result, principals/school heads should enable students and instructors to utilise electronic devices in class. However, continuous reminders of the potential detrimental impacts of these technologies should be implemented.

Index Terms - Academic Performance, Educational Innovations, Electronic Devices, Senior High School Students, Study Habits, Teaching and Learning Practice.

I. INTRODUCTION

At first, electronic devices were sold as a means of communication. Although we cannot dispute that there are several uses and advantages to utilising the internet and technology through devices, we must acknowledge that it is secretly diminishing the efficiency of community socialisation. The purpose of this study was to look at the relationship between overall time spent on electronic devices and students' academic achievement. However, there is currently a dearth of research on the effects of continuous device usage, particularly among students. Parental guidance is one of the ways to control the amount of gadget use. Thus, this study was done to raise parents' awareness regarding the effects of excessive use of gadget towards academic performance of the students According to digital marketing statistic, 71% of the population uses the internet daily which may reflect the uses of electronic gadgets as well. In research done by Ramane D and Kottapalle S [2], kids' ages 18 to 21 are now spend an average of 10 hours and 45 minutes a day on the internet which can be translated into 75 hours and 15 minutes per week. According to a research done by Laurisa et al. [3], they found out that 15 to 20 years old log an average of 7½ hours a day with media, including television, computers, cell phones and music players. This result of the research should be worried as youth easily exposed to the gadget use as early as 18 years old. We worried that this problem will be increasing and bring a negative effect to the quality of our young generation's academic achievement. So, further research and studies should be conducted in order to know whether current intervention and awareness on the effect of excessive use of gadgets is effective or not. As we know, college/University students required more attention as during their age, rapid changes of the hormones and instinct urged them to try something new without guidance which eventually may lead to severe cases. We have to know how students react to the effect of excessive use of gadget so that we can gain more information and improve their attitude towards excessive use of gadget from time to time. Other initiative also can be done to reduce the use of electronic gadget among students by exposing them to the side effects of excessive use of gadget. At present, the global adolescent population (15-23 years old) is more than 1.2 billion. In Nandurbar district, adolescents constitute around 22% of the whole population. The majority of them appear indulged in digital devices and technologies. Through the easy accessibility to the internet, at present, digital devices have become part and parcel of these young people's lives in Nandurbar district. A recent UNICEF study has revealed that internet use among adolescents in Nandurbar district has skyrocketed to 800 times the scale it was in the year 2000. Numerous teenagers pass countless times using technological gadgets in Nandurbar district similar to other countries. According to a study, 90% of the adolescents in Nandurbar use smartphones. It is notable that this population does not always use their phones, the internet and other gadgets for merely socializing or learning purposes. Hence, owing to the above-mentioned facts, the present study was carried out in Nandurbar District to find out the effect of the use of electronic gadgets on

the overall behavior and health of college-going children. Similar types of studies were conducted earlier with children in Western countries and also the countries having a developed society. To the best of our knowledge, this is the first-ever study on this topic in Nandurbar District, which aimed to assess the connection between usage of gadgets and health complications of the different classes of college-going children. The principal aim of the study was to comprehend the influence of gadget use and daily screen time on the physical and physiological well-being of secondary school students from various regions across Nandurbar District.

II. STUDY AREA AND POPULATION

From January 2023 to June 2023, we conducted a descriptive cross-sectional survey of 1803 college-going children and adolescents in grades 11 to 15 enrolled in Art, Science, and Commerce medium institutions in the Nandurbar districts of Maharashtra. Respondents were drawn from major divisional cities as well as outlying rural regions of Nandurbar district. To minimise prejudice, districts from each division were chosen at random, and all respondents, including those of tribal ancestry, were chosen at random from each class.

III. CRITERIA OF EXCLUSION

This survey only covered students enrolled in colleges and universities. We also avoided conducting interviews in schools where students had not given consent to participate. Television was removed from the list of gadgets because gadgets are tiny mechanical or electrical equipment that fall into one or more of the following categories: mobile phones, tabs or any other wireless devices with unique uses.

IV. DATA COLLECTION

The interviews were done using a pre-designed questionnaire. A preliminary questionnaire was evaluated in a pilot study to verify the tools prepared by eight experienced epidemiologists, endocrinologists, social science researchers, and paediatricians. The questionnaire was divided into three sections: sociodemographic characteristics, gadget usage, and physical difficulties encountered by individuals. To make it easier to comprehend, the questionnaire was designed bilingually (in English and Hindi, the native tongue that is marathi). The interviews were conducted by 37 enthusiastic, well-trained professionals with expertise in life science and medicine. The sampling technique was both random and purposeful, with universities picked on purpose to maintain variety and students chosen at random. Instead of being limited to a single research location, the field exam was conducted among students of the aforementioned grades from several regions. During physical interviews, the interviewers followed social distance and hygiene norms. Before beginning the survey, the College authorities and guardians gave their agreement, and the purpose of the study was thoroughly explained to the students. Six supervisors and primary investigators checked the correctness of the interviews.

3.1 Measurements

By comparing the data acquired from the participants, the link between various sociodemographic characteristics and gadget use was inferred. The individuals' average daily screen usage and sedentary behaviour were also tracked to see if these characteristics impacted their physical and emotional well-being. The questionnaire also covered the gadget type utilised by the participants, as well as the time period spent on daily gadget usage in 2022 and 2023. Participants' medical and psychological issues, such as headaches, sleeping difficulties, backache, vision worries, limb discomfort, and depression, were also noted.

3.2 Statical Examination

This study's statistical analyses were carried out using R (R core team, 2020) software. Pearson To evaluate the relationship between gadget use and sociodemographic characteristics, Chisquare statistics were utilised. Test results with a Pvalue of less than .05 are deemed statistically significant reasons for gadget usage. Different graphical presentations depict the various types of gadget use and the goal of gadget use. GraphPad Prism (GraphPad, San Diego, CA) was used to create the figures. Furthermore, the impacts of gadget use on various physical and mental health problems were evaluated using binary logistic regression. Each instance is fitted with logistic regression, with time spent on gadgets as the independent variable and health concerns as the dependent variable. The logistic regression model is utilised in this study to assess the impact of gadget use on various health concerns. The 5% level of significance is used to examine the statistical significance of several categories of gadget usage time. The entire analysis was carried out in R version 3.6.3.

3.3 The sociodemographic characteristics of respondents

In terms of gadget use, male students were more interested (89.25%) than female students (85.52%). The majority of responders (70.3%) belonged to the Art stream, followed by Science (12.4%) and Commerce (17.4%). The majority of participants (>90%) from both Commerce and Science medium schools were utilising gadgets, but a substantial (Pvalue.001) percentage of participants (>31%) from Art were not. A pattern of progressive increase in the use of gadgets (Pvalue =.0002) was seen across individuals residing in rural, suburban, and urban settings. Similar trends of increased gadget use were seen when individuals' monthly household income grew (Pvalue.0001). Almost all (>93%) of participants whose parents were graduates (at least university level) were found to be utilising gadgets. Obese people (93.58%) used gadgets more than underweight participants (84.26%).

3.4 Variation in the application of gadgets

More than 87% of individuals reported using electronic devices of some kind. Smartphones were found to be the most popular, with 67.11% of participants using this sort of device on a regular basis for a variety of functions. Around 39% of participants watched cartoons or films on their devices, followed by social media (27%) and video games (17%). However, 24.48% of participants also utilised these devices to take online classes. A small percentage of participants (8.74%) utilised these devices for routine conversation.

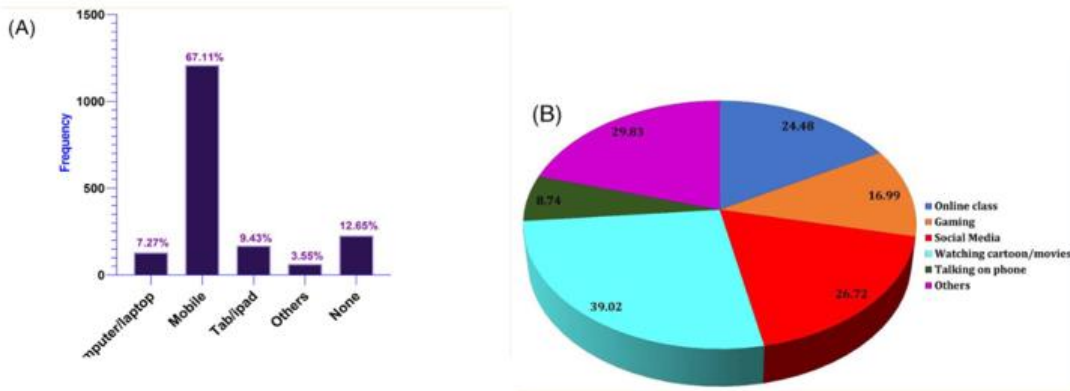


Figure 1. Types and purposes of student gadget use; (A) The proportion of participants who utilised cellphones, tablet devices, desktop PCs or laptop computers, or other sorts of electronics. (B) The nature of the purposes for which school children use electronic devices

IV. RESULTS AND DISCUSSION

In 2023, users used their gadgets for longer periods of time than in 2022. While just 33.50% of participants reported spending at least 2 hours per day on devices in 2022, the figure jumped to over 53% in 2023. The percentage of individuals who used devices (>6 hours) was three times higher in 2023 than in 2022. In 2022, a bigger number of participants (47.20%) spent 1 to 2 hours per day using gadgets; however, by 2020, a greater time spending characteristic was noticeable, and only 33.72% of total spend utilised gadgets 1 to 2 hours per day.

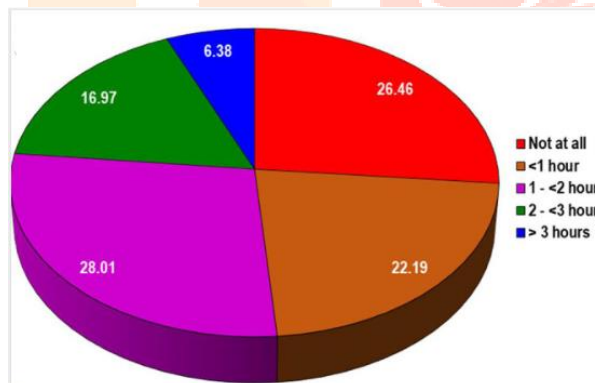


Figure 2 The pattern of time spent by participants in outdoor activities

Along with being preoccupied with devices, the participants had a lower proclivity to spend time engaging in outside activities such as playing games, strolling, and completing physical exercises. Almost 23% of those who took part spent more than 2 hours undertaking outside activities. More than a quarter (26.46%) of the participants did not spend much time outside on a regular basis. Only 23.35% of the participants engaged in outdoor activities for more than 2 hours. Participants were found to have headaches, sleep difficulties, backache, limb discomfort, vision disruption, or depression.

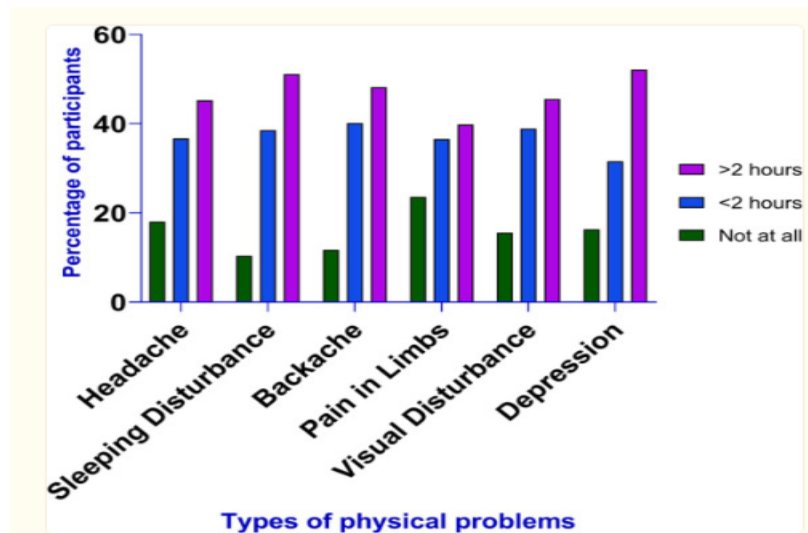


Figure 3 Types of physical issues caused by excessive device use

This study found a substantial relationship between the usage of electronic devices and the sociodemographic features of Nandurbar district college students. According to the study's findings, male college students in Nandurbar District are the most likely to use electronic devices. It has been observed that there is no gender prejudice in accessing technical facilities in terms of electronic device use currently. According to prior research, there is little agreement on gender and mobile/internet addiction, with some studies claiming higher incidence in males and others reporting higher prevalence in females. However, recent studies have shown that male students are three times more prone than female students to acquire technology addiction, and males prefer to use gadgets for longer amounts of time than females. Furthermore, it has been shown that among Vietnamese youngsters, vulnerability to excessive gadget/internet use has a substantial association with their sociodemographic features.

V. CONCLUSION

According to this study, there is a considerable relationship between electronic device use and education level and gender. Male pupils are more likely than female students to use technology. The use of devices is also dependent on simple access to the internet and related online services, which may vary depending on the respondents' socioeconomic standing. The same explanation applies to students in urban regions using more technology than students in rural areas. Unfortunately, gadgets have had a significant impact on physical and mental health. With so many possibilities for entertainment, youngsters tend to spend their leisure time with their electronics. The rising prevalence of gadget usage among teenagers is related to a number of physical health concerns (for example, headaches and sleeping disorders). To protect the health of the current and future generations, parents should be more conscious of their children's device usage limitations. Students should be encouraged to participate in more physical activity and outdoor games. Various health awareness programmes might be offered in order to commence counselling of students at both home and school. College students should be taught proper time management techniques. More research is needed on this topic in order to handle the issue more accurately and enhance the methods in the near future.

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