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Impact Of Screen Time On The Physical Health Of Adolescents. "A Study Of Patna Town".

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Abstract
The present study aims to know the impact of screen time on physical health of adolescents. In this study the sample was collected from Patna town using purposive sampling method. Data was collected from 300 adolescents aged 10-19 years. Out of 300 respondents, 142 were adolescent girls and 158 were adolescent boys. A questionnaire was developed for assessing the data from the respondents. The mean age of the adolescents was 15.01 years. The mean height, weight and BMI of the adolescents were 154 cm, 46.11kg and 19.13 kg/m^2 respectively. The study found that maximum number of adolescents that is 45.66% spend more than 4 hours on screen followed by medium users accounting for 43.66% of the total number of respondents. Only 10.66% of the respondents are low screen users. 49.66 % of the respondents were underweight, 31% of the respondents were normal weight, 15.66% of the respondents were overweight and 3.66% of the respondents were obese. It was also found that 47.66 % of the respondents complained of headache while using their digital device, 42% of the respondents complained of joint pain, and 39%, 33.66% & 28.33% complained of back pain, neck pain and shoulder pain respectively.

Keyword: *Screen Time, Physical Health, Adolescents.*

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I. Introduction

In this world of digital era, spending time on screen has become a part of daily routine of life. Screen time signifies the amount of time an individual spends on digital or electronic device's screen such as televisions, laptops, computers, tablets, mobiles etc (LeBlanc et al., 2015). The purpose of spending time on screen may vary from person to person. Some may spend time on digital or electronic screen for work, education while others may use it for entertainment, chatting, playing or just scrolling on screen for self gratification and making online purchases. From sending good morning messages to good night messages, checking mails, chatting, watching videos, reading for latest updates of different happenings around the world are done through television, computers, laptops, mobiles, tablets etc.

According to WHO (2022), adolescents are the individuals between the age of 10 to 19 years. In the past few years, there has been sharp upsurge in the screen time duration among adolescents (Common Sense Media, 2019). There may be one or the more reasons for screen duration upsurge. The different reasons behind increasing screen duration among adolescents are either for studying or to stay connected with near and dear ones or for entertainment purposes. Exposure to screen is one of the factor which may be checked during adolescence period as it has been found that excessive screen time have detrimental effects on children and adolescents (Hale & Guan, 2015). Multiple research studies have found that major concern related with the exposure to screen is the adoption of sedentary lifestyle and diminishing physical activity, studies have revealed that too much time spent on screens is related to higher risk of obesity in children and adolescents (Robinson et al., 2017).

According to a study by Straker et al. (2011) consistent use of digital devices is a risk factor for back pain, shoulder pain and neck pain and is also linked with the poor body posture, ultimately causing the musculoskeletal issue for an extended period of time.

Today adolescents are often been seen in poor body postures when they are with their digital devices and this poor body posture results in different musculoskeletal problems which includes pain in the back, discomfort in the neck which is commonly referred as "text neck" and repetitive strain complications (Hakala et al., 2012). A study by (Rosenfield, 2011) have found that prolonged usage of screen leads to digital eye strain which results in dryness in the eyes, headache, and blurred vision. Excessive use of screen is also increases the risk for myopia (Foreman et al., 2021) The amount of time an adolescent spend on screen may impact their

overall development and thus hampering one or more domains of development. The researcher in this study thus tried to find the impact of screen time on physical health of adolescents.

Objective:

1. To know the prevalence of musculoskeletal problems among adolescents due to excessive use of screen.
2. To know the prevalence of eye problems among adolescents due to excessive use of screen.
3. To know the nutritional status of the adolescents.

II. Methodology And Methods

The present study entitled, Impact of Screen Time on the Physical Health of Adolescents. "A Study of Patna Town", was carried out in Patna Town (Bihar).

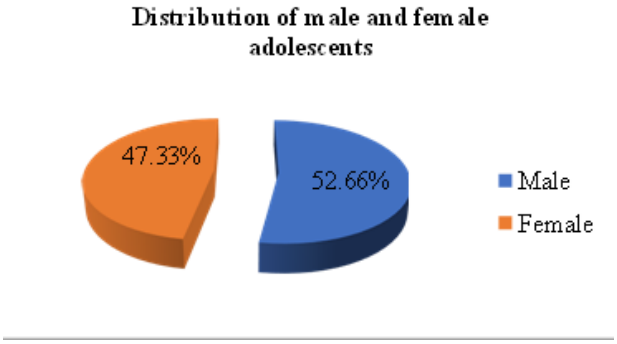
The study was conducted on the adolescents who were the users of one or more digital devices such as smart phones, laptops, Televisions, computer, and tablets. For the collection of data questionnaire was developed. The sampling technique that was used was for data collection was purposive sampling method. The survey was conducted in Patna town and a total of 300 samples was collected, consisting of 142 adolescent girls and 158 adolescent boys.To assess the nutritional status of the adolescents BMI was calculated. The collected data was analysed using Frequency and Percentage method.

III. Results And Discussions

Table 1: Distribution of male and female adolescents

Gender	Frequency	Percentage (%)
Male	158	52.66
Female	142	47.33

Figure 1: Percentage distribution of male and female adolescents.



The table 1 and the figures 1 shows that 47.33% are male adolescents and 52.66% are female adolescents.

Table 2: Table showing means of different variables

Variables	Mean
Age	15.01
Weight	46.11
Height	154
BMI	19.13

The table shows that the mean age of the adolescents was 15.01 years. The mean height, weight and BMI of the adolescents were 154 cm and 46.11kg and 19.13 kg/m^2 respectively.

Table 3: Distribution of duration of screen time of adolescents.

Screen time	Frequency	Percentage (%)
Low(<2 hrs)	32	10.66
Medium (2-4 hrs)	131	43.66
High (>4 hrs)	137	45.66

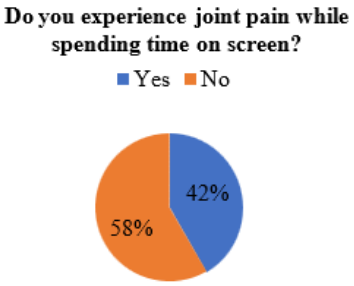
Table shows that maximum number of adolescents that is 45.66% spend more than 4 hours on screen, followed by medium users accounting for 43.66% of the total number of respondents. Only 10.66% of the respondents are low screen users.

Table 4: Distribution of nutritional status of adolescents.

Category	BMI	Frequency	Percentage (%)
Underweight	<18.5 kg/m^2	149	49.66
Normal weight	18.5 - 23.0 kg/m^2	93	31
Overweight	23.0 - 27.5 kg/m^2	47	15.66
Obese	≥ 27.5 kg/m^2	11	3.66

Table shows that 49.66 % of the respondents are underweight, 31% of the respondents are normal weight, 15.66% of the respondents are overweight and 3.66% of the respondents are obese. As the result showed that maximum percentages of respondents i.e., 49.66% are underweight, this might be the indicator of meal displacement (Bornhorst et al., 2015) ;(Mistry and Puthussery,2015) (Trembley et al.,2011); by adolescents or having irregular eating patterns (Bornhorst et al., 2015) or due to under nutrition (Mistry and Puthussery,2015) and not taking the adequate amount of calorie (Trembley et al., 2011).

Figure 2: Pie diagram showing percentage distribution of joint pain in adolescents.



The figure shows that 42% of the respondents experience joint pain while spending time on screen and 58% of the respondents do not experience joint pain while spending time on screen.

Figure 3: Pie diagram showing percentage distribution of back pain in adolescents.

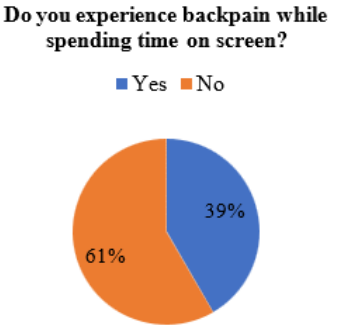


Figure shows that 39% of the respondents experience back pain while spending time on screen whereas 61% of the respondents do not feel back pain while spending time on screen.

Figure 4: Pie diagram showing percentage distribution of neck pain in adolescents.

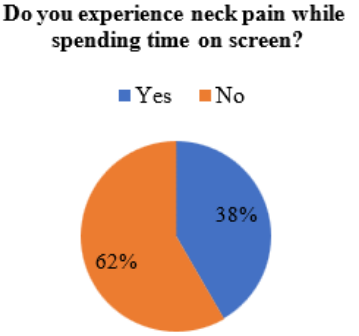


Figure shows that 38% of the respondents experience neck pain while spending time on screen whereas 62% of the respondents do not feel neck pain while spending time on screen.

Figure 5: Pie diagram showing percentage distribution of shoulder pain in adolescents.

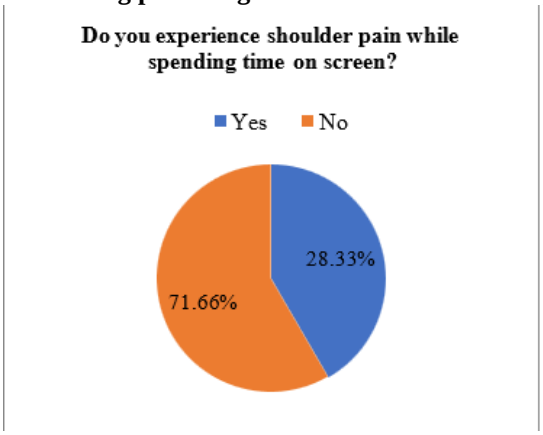


Figure shows that 28.33% of the respondents experience shoulder pain while spending time on screen whereas 71.66% of the respondents do not feel shoulder pain while spending time on screen.

Figure 6: Pie diagram showing percentage distribution of headache in adolescents.

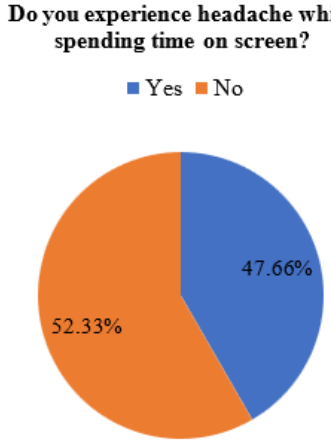


Figure shows that 47.66% of the respondents experience headache while spending time on screen whereas 52.33% of the respondents do not feel headache while spending time on screen.

Figure 7: Pie diagram showing percentage distribution of blurred vision in adolescents.

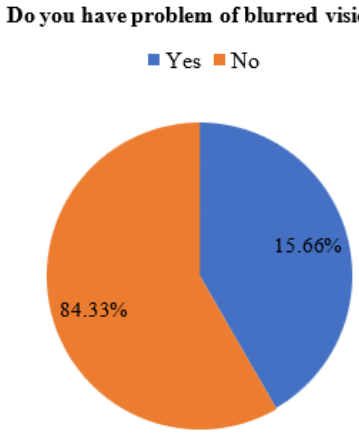


Figure shows that 15.66% of the respondents have reported blurred vision problem whereas 84.33% of the respondents does not have blurred vision problem.

Figure 8: Pie diagram showing percentage distribution of myopia among adolescents

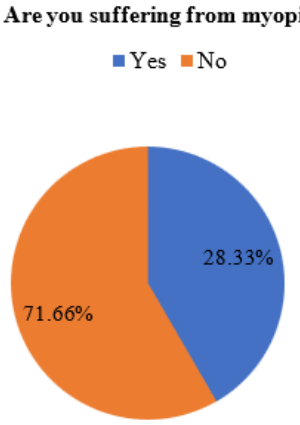


Figure shows that 28.33% of the respondents reported that they are suffering from myopia whereas 71.66% of the respondents are not suffering from myopia.

Figure 9: Pie diagram showing percentage distribution of eye pain in adolescents.

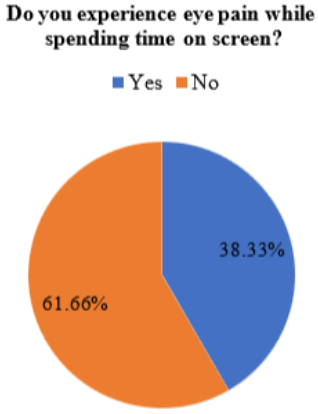


Figure shows that 38.33% of the respondents experience eye pain while spending time on screen , this might be due to the muscle fatigue resulting from consistent near work on screen (Rosenfield, 2016) whereas 61.66% of the respondents do not experience eye pain while using screen.

IV. Conclusion

The study thus concludes that excessive use of screen have negative effects on adolescents physical health as the study found that 47.66 % of the respondents complained of headache while using their digital device. 41.66% of the respondents complained of joint pain, and 39%, 33.66% & 28.33% complained of back pain, neck pain and shoulder pain respectively. 45.66% spend more than 4 hours on screen, followed by medium users accounting for 43.66% of the total number of respondents. According to Johnson (2022) the duration of screen time recommended for children aged 6-17 years of age is 2 hours of screen time and 2- 4 hours for teenagers but the present study found that 45.66% of the adolescents spends more than 4 hours on screen, which is really a matter of concern. The study also found that 49.66% of the adolescents are underweight, which shows that adolescents might not be having their regular meals or may not be taking the adequate amount of calorie. The study also found that 15.66% of the adolescents have blurred vision, 28.33% are myopic and 38.33 % of the respondents reported eye pain so it could be concluded that excessive use of screen is detrimental for adolescents and minimizing the digital screen exposure among adolescents is extremely important in today's world for their better healthy life.

Recommendations

1. Parents should set the everyday screen time use duration for the children and should stick to it without fail.
2. Adolescents should be encouraged to be more connected socially through their physical presence and not through their virtual presence.
3. Parents should encourage their children to have their recreational activity in their natural environment and promote outdoor plays in place of online games.
4. Parents should check the body posture of their children when they are with the electronic gadgets so as to minimize the risk of musculoskeletal disorders that may arise due to the poor body postures.

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