



## ASSOCIATION BETWEEN ELECTRONIC MEDIA USE AND SLEEPING HOURS AMONG SCHOOL CHILDREN

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### ABSTRACT

In today's digital world, media is omnipresent, and it is not possible to live without media. Digital technologies are not only the daily tools of communication, information and entertainment but they have become an integral part of peoples' lives. Many factors contribute to sleep disturbance among young adults. Social media (SM) use is increasing rapidly, and little is known regarding its association with sleep disturbance. Here the investigator analyzed the time spend by school students for electronic media as well as their sleeping hour. The investigator observed that there exists some relation between these factors. Most of the students spend more than 3 hours for electronic media. Only 36% of the students use electronic media for less than two hours.

**Keywords:** Electronic media, Sleep disturbance, Sleep quality, Technology and Health

### INTRODUCTION

Media is said to be the fourth pillar of democracy. One of its important roles is to inform people about the things that are happening. It is also important to give valid and real news and helps to progress the society. It has also helped to get justice for a lot of cases. Media plays an important role in our day – to – day life. We stay up to date with the news and the things that happen in the world with the help of it. The media typically plays three roles. In no particular order, the media plays the role of a gatekeeper, scorekeeper, and a watchdog. The media as a gatekeeper simply means that the elites who control a particular news entity decide what gets on the air or in a newspaper. They are the communication outlets or tools used to store and deliver information or data. The term refers to components of the mass media communications industry, such as print media, publishing, the news media, photography, cinema, broadcasting (radio and television), and advertising. Health is the level of functional and metabolic efficiency of a living organism. In humans it is the ability of individuals or communities to adapt and self-manage when facing physical, mental, psychological and social changes with environment. The World Health Organization (WHO) defined health in its broader sense in its 1948 constitution as "a state of complete physical, mental, and social well-being and not merely the absence of disease. The key factors that have been found to influence whether people are healthy or unhealthy includes social environment, physical environment, working condition, income, social status, education and health care services. In the modern world, in addition to these factors, media especially social media influences the health of the people. In the era of globalization, changing media technologies have dramatically transformed the media and health culture of people. The word media is a plural of the word medium which disseminates the messages. Media can be defined in a combined manner which links Information Communication Technologies (ICT) with their associated social contexts. This has brought three elements i.e. technological artefacts and devices; activities, practices and uses; and social arrangements and organizations in a combined form. A similar definition can be applied to old media, although the artefacts, uses and arrangements may vary. According to Lorimer and Scannell (2009) media is a wide term which comprises print, electronic and new media. Digital technologies are not only the daily tools of communication, information and entertainment but they have become an integral part of peoples' lives.

Media is one of the methods of controlling people and leisure. An individual in a day on an average spend more than seven hours using media. Large number of people has access to different media technologies to a bedroom like television, computer, internet, and a cell phone. No doubt, that change in communication technologies has brought many benefits to human beings, but it has also resulted in many unhealthy habits. Unprecedented use of media has created psychosocial and emotional problems. This has caused an unending cycle of malnutrition which is carried from one generation to another. It has become essential to examine whether the time spent using media is associated with poorer or better health. Sleep plays a vital role in good health and well-being throughout our life. Getting enough quality sleep at the right times can help protect our mental health, physical



health, quality of life, and safety. During sleep, our body is working to support healthy brain function and maintain our physical health. Sleep is important to a number of brain functions, including how nerve cells (neurons) communicate with each other. Research shows that a chronic lack of sleep, or getting poor quality sleep, increases the risk of disorders including high blood pressure, cardiovascular disease, diabetes, depression, and obesity. The more electronic devices that a person uses in the evening, the harder it is to fall asleep or stay asleep.

Digital technologies are not only the daily tools of communication, information and entertainment but they have become an integral part of their lives. There is no doubt that to survive in the technologically advanced society, access to new communication technologies has become very essential, but the ubiquitous status of media is badly affecting the health of adolescents. While fulfilling numerous functions in the daily life, such as providing information, entertainment etc. many harmful effects are caused on masses due to compulsory exposure to mass media. The influence of media on people's health is a cause of public concern, not only in India but across world. Research has found that media can influence an individual's beliefs and behaviors in terms of violence and aggression, sex, substance abuse, obesity and eating disorders. Heavy television viewing has been linked with attention-deficit disorder and diminished academic performance, as well as hypertension, asthma, sleep disorders, mood disorders, psychological distress and depression. Research shows that consistently getting seven to eight hours of sleep per night is beneficial for adults.

Any more or less can increase your risk for serious conditions like diabetes mellitus, heart disease, and even death. Ninety percent of people in the U.S. admit to using a technological device during the hour before turning in, and children often use electronic media to help them relax at night. In the opinion of Wartella and Jennings (2000) most of them do not get quality sleep, and in most cases their sleep times do not match with the family members, which have led to undesirable relationships, stress and conflicts in the family. Long exposure to media has also been associated with physical problems such as tiredness, seizures, hand injuries and changes in heart rate. Verma (2001) further delineates common symptoms associated with the excessive use of computers, like frequent headaches, pain in the eyes and frequently blinking and squinting. A 2010 review concluded that "the use of electronic media by children and adolescents does have a negative impact on their sleep, although the precise effects and mechanisms remain unclear", with the most consistent results associating excessive media use with shorter sleep duration and delayed bed times. A 2016 meta-analysis found that "Bedtime access and use of media devices was significantly associated with inadequate sleep quantity; poor sleep quality; and excessive daytime sleepiness". The American Academy of Pediatrics recommends screen time for children be limited for multiple reasons, among them that "Too much screen time can also harm the amount and quality of sleep"

Recent developments in media technologies have brought changes in people's lifestyle also. Adolescents prefer accessing media technologies than doing any kind of physical activity. Such kind of lifestyle is associated with overweight and obesity problems among adolescents. Vandewater (2004) stated that long hours of sitting in front of the screen causes lack of physical activity. Sedentary habits are the main contributors to obesity problems. In fact, adolescents who use media have a lower activity level, and lower activity is linked to a higher rate of obesity. Thus, a study on the influence of media on the health habits of the modern generation is significant.

To find a correlation, Mark and her colleagues monitored computer and phone use among 71 undergraduate students at UCI over the course of seven days in 2014. The researchers installed software onto the student's computers and phones in order to monitor their use. Each time they logged onto a social network, called or texted someone, or opened a new browser or browser tab, the software would create a timestamp. They also collected twice-daily surveys to determine sleep schedule and assess stress levels from work and their sleep quality.

#### Health and media -an overview

The media — everything from television, radio, and film to games, advertising, and social media outlets like Face book and Twitter — can have significant impacts on individual and population health. Exposure to media, especially among youth, may affect health behaviours such as substance use, sexual activity, and eating habits. Youth spend an average of >7 hours/day using media, and the vast majority of them have access to a bedroom television, computer, the Internet, a video-game console, and a cell phone. Studies have shown that media can provide information about safe health practices and can foster socialconnectedness. However, recent evidence raises concerns about media's effects on aggression, sexual behaviour, substance use, disordered eating, and academic difficulties.



Heavy television viewing has also been associated with hypercholesterolemia, hypertension, an increased prevalence of asthma, sleep disorders, mood disorders, psychological distress and depression.

### Effect of Media on health

Disrupted Sleep: Sleep is one of the most important factors in our overall health. In order to achieve and maintain healthy sleep, our bodies need to be able to naturally produce melatonin. Staring at smartphone screens in bed is like tricking the body into staring into a brightly-lit landscape, which delays melatonin production and prevents us from having quality sleep patterns, resulting in a host of health issues. The use of computers (including devices such as smartphones, tablet computers and laptops) by children and adolescents before bed has been associated with a reduction in the hours of sleep experienced by frequent users, along with a decreased quality of sleep, in most cases. The results of computer use at night have been linked with tiredness.

Many apps promise to improve sleep by filtering out blue light produced by media devices; there have been no large studies to assess whether such apps work. Some users express dissatisfaction with the resultant orange tint of screens. Some people use blue -blocking glasses, for the purpose of attempting to block out blue light both from electronic media and from other artificial light sources.

Posture: Numerous medical and scientific studies have shown alarming results when testing people who use smartphones for more than four hours a day and those who don't. Smartphone users tend to develop rounded shoulders, spinal curvatures, vertebrate disorders, and associated neck pain and headaches caused by these ailments. It makes sense. Using our smartphones often involves being hunched over. Our posture suffers, and we alter the muscles and bones in our torsos over time.

Eyesight: Smartphones emit blue light, which is very bright for our eyes. Looking at our smartphones in bed is especially harmful, as this direct exposure to light can be damaging to our retinas, which can lead to macular degeneration (i.e., worsening eyesight). Also, a growing number of ophthalmologists are beginning to believe there's a link between smartphone use and cataracts, with younger and younger patients experiencing cataracts instead of the typical 75-and-older crowd.

Obesity and Eating Disorders: Randomized, controlled experiments have provided evidence that exposure to junk food advertising has an impact on children's food beliefs and preferences. Eating while viewing television, might lead to greater food consumption. Children that not get enough sleep are more likely to engage in sedentary behaviours (such as television-viewing) and less likely to engage in physical activity. The media play a crucial role in the formation of body self-image and may be responsible for creating unrealistic expectations and body dissatisfaction.

### Social Media Can Directly Impact Physical Health

This is usually associated with the way it is used. For example:

Carpal Tunnel Syndrome. Too much keying can lead to problems that affect the hands or wrists. There are also specific problems associated with keying on mobile phones, which can strain the tendons of the fingers.

Eye problems. One can get eyestrain from staring at screens for too long.

Fatigue. This is another symptom of overusing social media. Staying up too late posting on Twitter or Facebook, may lead to losing valuable sleep.

Lack of exercise. Social media can cut into time one might otherwise be spending outdoors or exercising.

Distraction. One of the most dangerous potential consequences of social media addiction is driving while being distracted. As recent stories have confirmed, one can even get hurt texting and walking.

### Adverse Impact of Media

Some of the adverse impacts of media includes

Social Media Addiction: Social media addiction is a real phenomenon. As more people carry around smartphones and other devices wherever they go, it becomes harder to escape the internet. And people increasingly spend their online time on social media sites such as Facebook, Twitter and Instagram.



For people who are addicted to these sites, it can have a harmful effect on their lives and even their health. Any addiction is potentially harmful if it saps the energy away from other activities, such as work, physical activity and offline relationships. There are various ways that social media addiction harms mental health.

Emotional Impact: People use social media for many things, such as socializing, finding and sharing information, shopping and simply as a diversion. Some of these activities are fairly neutral while others may cause strong emotions. Positive connections with people are important for your mental and even physical health. There's plenty of evidence that social isolation is associated with a shorter life span, not to mention a diminished quality of life. While interacting with people on social media is not enough, and not a substitute for live interactions, it can be beneficial nonetheless.

Seniors and those who are disabled, who may have limited mobility, can use social media to connect in ways that they otherwise could not. Elderly people can talk to their grandkids. Someone stationed overseas in the military can talk to his or her spouse back home. Friends who live in different states can chat online. These are just a few of the ways that social media can improve people's lives. On the other hand, social media can cause stress and other negative emotions. The issue of cyber-bullying is a good example of this. There are also people who are attached to trolling or arguing about everything from politics to sports. If interacting on social media causes stress, it's not good for health.

The media is increasingly pervasive in the lives of children and adolescents. In busy urban life, children spend very little time to relate with people. Rather they spend much time in media, exploring new knowledge about the world. Electronic media can have both, positive and negative influence on children. It has been found that mass media has potentially harmful influence on the health-related behaviors of children and adolescents. The media has a disturbing potential to negatively affect many aspects of children's healthy development, including weight status, sexual initiation, aggressive feelings and beliefs, consumerism and social isolation. In a study to investigate the impact of media on the physical health of adolescents in Chennai, media usage was found to be highly influencing factor for the physical health of adolescents. Furthermore, time spent with media decreases the amount of time available for pursuing other more healthy activities such as sports, physical activity, community service, cultural pursuits, and family time. Many negative associations of electronic media use have been reported relating to reduced physical activity, overweight, and unhealthy dietary behavior. Children now spend hours a day with their TV's, computers, mobile phones, and other electronic media, more time than they spend in school and more than many of them sleep. The media has a disturbing potential to negatively affect many aspects of children's healthy development, including weight status, sexual initiation, aggressive feelings and beliefs, consumerism and social isolation.

Despite the increase in students accessing social networking sites through mobile devices, there has been limited investigation on students and their sleep and subsequent daytime sleepiness. The use of mobile phones or handheld devices to access the Internet, especially, social networking sites may extend the waking hours further into the night and thereby contribute to daytime sleepiness among students. It is also important to identify the media usage and sleeping hour so that proper intervention can be carried out to help students better manage their sleep quality and quantity. It is well known that poor sleep quality has negative neurobehavioral and psychological consequences that might lead to poor health and academic functioning.

Based on the literature reviewed on social media use among students, we expected that a significant number of students would use electronic media devices at bedtime to access social networking sites. Furthermore, social media usage was expected to be inversely proportional to sleep duration and positively related to daytime sleepiness. The following research questions were used to design this study and analyze the data collected:

- (a) How many hours do students spend on electronic media daily?
- (b) What relationships exist between electronic media usage and sleeping hours in students?

#### Objectives of the study

To check the electronic media use of school students with respect to the time spent.

To check the time spends for sleeping.

To compare electronic media use and sleeping hour of school students.



## METHODOLOGY

The investigator used survey method to know the sleeping time and time spend for electronic media by school students. The study was conducted at different schools in Kottayam district. The sample consists of 1325 students from various schools. There were 59 students from upper primary, 1057 students from high school and 209 students from higher secondary. Investigator constructed a questionnaire in tabulated form for collecting data. The name of the student, age, class, weight, height, time spend for electronic media use, sleeping hours and percentage of marks had to be filled in the table needed for the achievement of objectives of the study. The most commonly used statistical technique is descriptive statistics. It involves techniques for summarizing data and presenting them in a usable form. Classification and tabulation are two important methods in descriptive statistics. Graphs are also used for easiness in analysis, interpretation and comparison of data. The tool was administered among 1325 students in different schools. Every student actively cooperated in the tool administration.

## ANALYSIS AND INTERPRETATION

Analysis and interpretation are the most important and essential part of the study. The collected primary data are used for interpretation and analysis. For analysis tools like tables and graphs, are used.

### Objective 1

To discuss the first objective the investigator collected the time spent by school students for electronic media with the tool. The time spend is arranged as frequency distribution table. Table 1 shows the distribution of UP students, HS students and HSS students.

**Table No 1**  
Percentage analysis of time spent by school students for electronic media

No of Hours	UP Students		HS students		HSS students	
	No	Per.	No	Per.	No	Per.
Less than 1	4	7%	31	3%	3	1.5
1-2	13	22%	368	35%	59	28
2-3	16	27%	403	38%	79	38
3-4	17	29%	166	16%	61	29
4-5	3	5%	58	5%	3	1.5
5 and above	6	10%	31	3%	4	2
<b>Total</b>	59	100%	1057	100%	209	100%

From table 1 it is clear that only 29% of the UP school students use electronic media for less than 2 hours daily and 71% use 2 hours and more. Table 2 reveals that 38% of high school students spend less than 2 hours for electronic media, 38% spend 2 -3 hours and the rest more than that. Table 3 shows that there are only 29.5% of the higher secondary school students using electronic media less than 2 hours and 70.5% use 2 or more hours. It can be seen that 3% of the entire sample use electronic media for 5 hours and above daily.

To analyze the second objective the investigator collected the sleeping hours of all the school students using the tool. Table 2 show the distribution of students according to their sleeping hours, in the UP, HS, and HSS level respectively.

**Table No 2**  
Percentage analysis of sleep hours of UP, HS and HSS students

No of Hours	UP Students		HS students		HSS students	
	No	Per.	No	Per.	No	Per.
4-6	1	2%	40	4%	2	1%
6-8	31	52%	504	48%	97	46.5%
8-10	24	41%	488	46%	109	52%
10 and above	3	5%	25	2%	1	0.5%
<b>Total</b>	59	100%	1057	100%	209	100%



Table 2 shows that almost half(52%) of the UP school students get 6 -8 hours sleep daily, while 2% sleep less than 6 hours. Many of them also sleep for 8 -10 hours. Table 5 reveals that there are almost equal number of high school students who sleep for 6 -8 hours and 8-10 hours. 4% of them sleep less than 6 hours. From table 6 it is clear that majority(52%) of higher secondary school students sleep for 8 -10 hours daily. 1% of them sleep for less than 6 hours. It is clear from these tables that almost 2% of the entire students sleep for more than 10 hours a day.

#### Major findings

Only 36% of the students use electronic media for less than two hours.

- 4% of the high school students have sleeping hours less than hours.
- UP school students use electronic media for longer hours.
- Most of the high school and higher secondary school students spent 2 -3 hours for electronic media.
- More than 3% of the entire sample have sleeping hours less than 6 hours.
- 2% students sleep more than 10 hours and HSS students get more sleeping hours when compared to UP and HS students.

#### Implications

- There should be more researches to study electronic media use and how it grabs the sleeping hours of school students.
- Electronic media needs to be recognized as a major public health issue
- Parents and teachers must keep a regular check on the irregular sleeping habits due to excess use of electronic media by school students.
- There should be adult control in the use of electronic media by students.
- Restrict the usage of electronic media by students to around 2 hours a day.
- Authentic bodies should formulate and implement the guidelines to help parents and children to develop healthy media using habits.
- Ensure that students get a minimum 6 hours sleep daily.

#### CONCLUSION:

In today's world of globalization, the impact and influence of mass media is more than ever and all pervasive. Media affect the influence almost all aspects of our life. Mass media have profound influence on people's thinking, sentiment, sensibilities and their mode of reactions. People spend an average of more than seven hours per day using media, and the vast majority of them have access to a bedroom television, computer, the internet and a cell phone. Children and adolescents spend more time with media than they do in any other activity except for sleeping. Media has the potential to generate both positive and negative effects on people. People who spend more time on media may experience negative side effects such as eye strain, social withdrawal or lack of sleep. Sleep is one of the most important factors in our overall health. Lack of sleep may result in a host of health issues. The recent studies show how the use of media negatively affects the health and wellbeing of people. There exists a comparable relation between electronic media use and sleeping hours of school students. It is the need of the era to develop healthy generation with healthy media using habits. We need to find ways to optimize the role of media in our society, taking advantage of their positive attributes and minimizing their negative ones.

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