Screen time and Sleep Quality among College and University Students of Karachi

Tempo de tela e qualidade do sono entre estudantes universitários de Karachi

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Abstract

Objectives: To assess the relationship between screen times and sleep quality of the age group 17-24. **Methodology:** This is a cross-sectional study. The study was conducted on students of Colleges and universities in Gulshan-e-Iqbal Town Karachi. A total of 600 undergraduate students were approached in colleges and universities of Gulshan Town, Karachi. The sampling technique was Multi Staged sampling. The research instrument comprised of 3 parts i) Demographic profile, ii) Sleep quality measures and iii) Screen time usage measures. **Results**: The mean total hour of sleep was 6.7 ± 1.5. The Mean Cumulative score of the components of the questionnaire was 7.47 ± 3.56, while 174 (29%) have Normal Sleep quality and 426 (71%) have poor sleep according to the questionnaire. The odds ratio suggests there were 4.23 times higher chances of poor sleep quality in students whose screen time was more than 2 hours on weekdays as compared to other students. (OR: 4.23, 95% CI: 2.66-6.72). The odds ratio suggests there were 24.15 times higher chances of poor sleep quality in students whose screen time was more than 2 hours on weekends as compared to other students (OR: 24.15, 95% CI: 11.192-52.11). **Conclusion:** As, negative impacts were determined within sleep quality, and increased screen watching of multiple versions of the devices (screen time), influencing the commended level of screen watching among university and college students (age 17-24) is an affair of public health.

Keywords: Screen Time. Sleep Quality. College. University Student.

Resumo

Objetivos: Avaliar a relação entre o tempo de tela e a qualidade do sono de estudantes universitarios na faixa etária de 17 a 24 anos. **Metodologia**: Este é um estudo transversal. O estudo foi realizado em estudantes de faculdades e universidades em Gulshan-e-Iqbal Town Karachi. Um total de 600 alunos de graduação foram abordados nessas instituicoes. A técnica de amostragem foi a amostragem Multi Staged. O instrumento de pesquisa compreendeu 3 partes i) Perfil demográfico, ii) Medidas de qualidade do sono e iii) Medidas de uso do tempo de tela. **Resultados**: A média de horas totais de sono foi de 6,7 ± 1,5. A pontuação média cumulativa dos componentes do questionário foi de 7,47 ± 3,56, sendo 174 (29%) com qualidade de sono normal e 426 (71%) com sono ruim, de acordo com o questionário. O odds ratio sugere que houve 4,23 vezes mais chances de má qualidade do sono em alunos cujo tempo de tela era superior a 2 horas durante a semana, em comparação com outros alunos (OR: 4,23, IC 95%: 2,66-6,72). O odds ratio sugere que houve 24,15 vezes mais chances de má qualidade do sono em alunos cujo tempo de tela era superior a 2 horas nos finais de semana em comparação com outros alunos (OR: 24,15, IC 95%: 11,192-52,11). **Conclusão**: Como os impactos negativos foram determinados na qualidade do sono e aumento da visualização da tela de várias versões dos dispositivos (tempo de tela), influenciar o nível recomendado de visualização da tela entre universitários e estudantes universitários (idade 17-24) é uma questão de saúde pública.

Palavras-chave: Tempo de tela. Qualidade do sono. Faculdade. Estudante universitário.

INTRODUCTION

During the last few decades, the accessibility and use of electronic devices such as smartphones, video games, consoles, T.V., computers, and tablets have been increased drastically[1]. These have turned an inherent constituent of living as illustrated by all American teenagers, 97% of them had at least one electronic media device in their sleeping room[2].

In Pakistan Internet service is consumed by 44.6 Million, that is 22 % of the entire population. An annual increase of internet users is 27%, while 25% watch online video daily and 18% use social media activities. Active social media users are growing annually by 13 % of the total population[3]. The mobile phone users are 109.5 million that is 55% of the entire population.

Mobile connections are 147.5 million. Social media utilized through mobile are 32 million. Out of those 26 million active mobile social media users are aged 18 to 34. Furthermore, 15 million of them are of age 18 to 24 years[3]. The median age of social media users is reported as 24.1 years. The mobile phone is used by 82 % of the total population, of them, smartphone users are 31%, laptop or desktop are 10 %, tablet or computer is used by 1 %, while television viewers are 76%[3].

Sleep is a built-in necessity of human beings; its physiology depends on two main processes, first that boosts sleep (procedure S), and second, that holds alertness (procedure C). Procedure S is the homeostatic drive for sleep. The demand for

sleep (procedure S) cumulates throughout the day, elevates just ahead of bedtime at night and scatters across the night. Procedure C is wake encouraging and is determined by the circadian system. Procedure C establishes throughout the day, functioning to antagonize procedure S and boosts sleeplessness and alerting[4]. There are significant issues regarding sleeping and poor sleep quality with students of many western countries have counted[5].

Studies showed that screen time has connections with sleep or sleep quality, resulting in various negative outcomes related to health. Those are an increase in body mass index (BMI), diminution in cognitive and language development, and also causing a decline in academic success[2]. Research from Europe and the US delineated that screen time increase had a negative impact on adolescent's health and development[6]. Heavy use of screens in youth also has a negative effect on academics and social outcomes in greater terms[7]. Screen time use in excess has scientifically proven as an unhealthy routine for a person who uses it at a very young age. Other research suggests that excessive time used for the screen, linked to negative health outcomes for young ones[8].

Although, the statistics of media use are available in the literature from the Pakistani region. However, our literature search revealed an effect of media use on sleep quality and disorder was not found. Therefore, this study is mainly derived to determine the relationship of screen time and media use on sleep quality of young population studying in colleges and universities of Karachi, Pakistan. It is substantially recognized that economic and technological advancement raise screen time among young students in developing countries. A couple of recent reviews in this field proved an opposite association between electronic media habit and sleep parameters such as more time to fall asleep[9], detained bedtime, and decreased total sleep. Parallel with more use of electronic devices, sleep is being in decline in the last few decades, among adolescents[10]. Studies have found that not only television viewing, but also computer game playing, internet use, and access to mobile phones by children were correlated with interrupted sleep and sleep disturbances[11].

Poor sleep quality is one of the major adverse consequences of mobile phone addiction[12]. A longitudinal study reported that computer game playing resulted in a higher arousal state of the CNS significantly disrupted sleep, patterns (including an approx. 20 min further delay in sleep onset), and reduce verbal memory performance[13]. Greater internet consumption is linked with shorter sleep duration, later bedtimes, and rise times; longer sleep response time, and increased daytime tiredness in young ones[14]. Sleep quality in this age group of 13-24 is mostly associated with screen time[15].

Screens emit blue light shorter in wavelength, which is helpful in the morning to be awake, and in the night also it is causing the same phenomenon[16]. Watching entertaining shows, scary, enthusiastic games, movies can release adrenaline at night;

secretion of dopamine can cause addiction, suppressing the secretion of melatonin sleep hormone. The research demonstrates that media presence in the sleeping room and media use inclined to be connected with later bedtimes, later arousal times, and a poorer length of sleep on the weekdays and weekends and thus may be a dangerous element, for all types of sleep disorders[17]. Sleep is required for the development of the brain and healthy life. Lack of sleep can cause a decrease in learning, concentration, memory, behavior, and health more generally[18]. Poor sleep quality is due to the difficulty to get to sleep, waking up frequently throughout sleep, getting up too soon in the day, and feeling drowsy in the daytime[19]. Poor sleep quality is a risk factor for many health issues[20]. Sleep disruption and deficient sleep duration are connected with daytime sleepiness and a chain of poor health outcomes[21]. Furthermore, a universal study of over 16,000 students ages 17-30 indicated a dose-response connection among fewer hours of sleep and describing poor health[9].

A study held in South Korea on 1457 students of grade eleven and twelfth accounted for acquiring merely 5.4 hours of sleep on weekdays[22]. According to a Japanese study of 102,451 high school students, 23.5% of teenagers also submitted experiencing one or more indicators of insomnia[23]. In Hong Kong, a report reasoned on 1629 young ones aged twelve to nineteen determined the mean of sleep as long to be 7.3 hours throughout school-going days[22]. The quality of sleep is dominant in young ones. Of the 4747 players, the prevalence of shorter sleep quality was 9.8% in China while 11.8% among high screen time users had poor sleep[24]. Persons going through sleep deficiency are more probable to have chronic diseases such as cardiovascular disease, diabetes, depression, or obesity[20].

Studies have shown an important relationship between youth screen time and attention issues[2]. Myriad research proves a relationship between media and wellness consequences[25]. Screen time has been reported as a vital danger component for overweight[26]. Physical inertia is the largest trouble of the 21st century[27]. Longitudinal research also described that the prominent frequency of mobile phone use at baseline was a risk factor for sleep disturbance at 1-year follow-up in young adults[12]. In Hong Kong, 87% of the young ones possess a mobile phone, the most prominent in Asia[22]. Screen time is becoming a major public health issue. Technologies origination is a dynamic, turbulent power that has transmuted the purpose of media in the lives of the children and adolescents from the confined silos of television, movies, and books to the grand and ubiquitous universe of digital media[28].

In a study in Pakistan, 6200 school-going kids were indiscriminately neared. 4030 (65%) answered of 6200 kinds. In them, 2889 (72%) were smartphone consumers. 1993 (69%) said they are short term consumers while 896 (31%) were long-term users. There was a positive association found among behavior linked problems and smartphones utilization sleep disturbance (p-value 0.011)[29]. Of those who experience often sleep disturbance, 177 (9%) were short-term smartphone consumers

were 458 (51%) were long-term mobile phone users, with an odds ratio of 1.61 (1.29-2.01). Sometimes sleep disturbance in kids was found in 892 (45%) with short-term sleep disturbance and 206 (23%) with long-term mobile phone users and odds ratio of 1.77 (1.13-2.78). Those who never experience sleep disturbance 924 (46%) were short-term smartphone users, 232 (26%) were short-term users[29].

There are some studies carried out regarding sleep quality in students of Pakistan[30]. A study reported that 74.4% of students sleep late (after 10 pm) and the main cause was homework and watching TV[31]. Another study has assessed sleep times of medical students[32]. There is another study regarding the evaluation of sleep and academic execution in students of the medical college[33]. There was a positive association found in a research of colleges in Karachi, among sleep onset latency and technological device use before going to sleep. The mobile phone was found to be the most effective device[34]

The list of most prominent number of mobile phone readers around the world, Pakistan is 10th on the list[35]. An increment from 300,000 (2001) to 90 million (2008) in Pakistan has been discovered[36]. Entire mobile phone subscribers were figured to be 98 million in May 2010 as per declaration made by Pakistan Telecommunication Authority (PTA)[36]. Mobile phone subscribers were rising at a rate of 0.55% in April 2010 and this rate incremented to 0.72% in May 2010[37]. About 91% of pupils who responded were between 17-30 years of age and the rest of them were between 31-46 years[36]. The same research suggests that mobile phone consumers in Pakistan are not showing habit-forming or above inordinate utilization practice of mobile phone[36].

Pakistan is one of the countries whose internet access rates are among the lowest in the world. In Pakistan (15%) adults use the internet[38]. In Pakistan the use of the internet is increased within years in 2013 it was 8 % and in 2015 it increased by 7 % to end at 15% in 2015[38]. In Pakistan internet is mostly used by the age group of 18-34 (20%), with adults who are more educated (33%) and 20% are from high-income groups (38). In Pakistan, 50% of internet users or persons who reported having smartphones use social networking sites[38].

The data regarding sleep patterns and habits regarding screen time in Pakistan are limited. In the last two decades, there has been a significant enlargement in screens that youth utilize for communication and entertainment. This is emerging to be a huge public health problem that has negative health effects on youth, for example, due to screen time youth has less physical activity, therefore they have a high probability of being overweight and other metabolic risk factors, less time for academic studies causing lower grades, less time or sleep in the night causing daytime sleepiness and less alertness and other behavioral issues. Gaps have been acknowledged in this field. Although many international studies are proving the association, limited data is proving the association between screen time and sleep quality in Pakistan. Keeping in mind

these breaches in information regarding this topic, this research will give knowledge on using screens and length of sleep and quality of sleep among college & university students.

In Pakistan, there is less data regarding sleep quality and screen time in youth. Statistics revealed that our youth has become excessive users to screen that they might have lesser time for sleep and hence prone to many health, social and other issues[2] This study will emphasize the issue in our society and delineates the consequences of screen time. The data regarding sleep patterns and habits regarding screen time in Pakistan are limited. In the last two decades, there has been a significant enlargement in screens that youth utilize for communication and entertainment. This is emerging to be a huge public health problem that has negative health effects on youth, for example, due to screen time youth has less physical activity, therefore they have a high probability of being overweight and other metabolic risk factors, less time for academic studies causing lower grades, less time or sleep in the night causing daytime sleepiness and less alertness and other behavioral issues.

These days mobile phones, televisions, computer, PlayStations, tablets, and laptops are in use of almost everyone, especially young one has more time for these. Screen time use in Pakistan has increased drastically, especially during the last decades. Access to these gadgets is easily available to young populations. However, as far as our literature search is concerned, no study from Pakistan specifically reported this aspect. This study specifically will define the effect of screen time on the sleep quality of university and college students in Karachi.

METHODS

Research Design and Settings

This is a Cross-sectional. The data was collected from Colleges and Universities in Gulshan-e-Iqbal town Karachi. The choice of this town was made as Gulshan-e-Iqbal town is one of the biggest towns and having the highest number of academic institutes in the city.

Inclusion Criteria

Regular students from colleges and universities of Gulshan-e-Iqbal town. Students with age between 17 to 24 years. We put an upper limit to the age to determine the exact effect of the screen time on the sleep as the most of the students of this age group are enrolled in the University, mostly persons with higher age than 24 are graduated or they have more responsibilities that will affect their screen time and sleep A college affiliated with an intermediate board examination only. The degree-awarding university is recognized by the Higher Education Commission (HEC) of Pakistan. Students possessing mobile phones, tablets, television, computer, and video games.

Exclusion Criteria

Affiliated colleges with HEC recognized universities (to get the uniformity in the data, there is a difference in lifestyles of both individuals). Special Students or students with any disability. Students who refused to participate. Students taking medications related to their sedentary conditions. (Sedentary conditions are referred as any medical issue that causes to take any medicine that will affect their sleeping time.)

Sampling Technique

The sampling technique was Multi Staged sampling. In Gulshan-e-Iqbal there are 17 Universities and 49 colleges. Since, we know the total number of Universities and Colleges in Gulshan-e-Iqbal town, using the fixed cluster sampling method, these are the clusters and we took 2 colleges and 1 university randomly as a 2:1 ratio, that each cluster has the same probability of being selected. Since the administrative structure in colleges and universities are different. Therefore, different multi-stage sampling techniques will be used to approach the students.

Sampling in colleges: Each college has two standards First year and Second year. These fields were taken as stratification units. Afterward, 1st and 2nd-year students were approached using convenient sampling methods. (There are two years of education in college system of Pakistan, which are named as 1st year that is 11th standard and 2nd year that is 12th standard.)

Sampling in universities: The administrative structure of universities is usually comprised of Deanship, departments, and then different academic programs. We have restricted to undergraduate study programs only. Accordingly, two Deanships were Allied Sciences and Dow College of Pharmacy was chosen randomly as a cluster. Then equally proportional sampling was employed to recruit students conveniently from each class in the undergraduate program.

Study Duration

The synopsis was approved in October 2018 and the study was completed in May 2019. The study was conducted on students of Colleges and universities in Gulshan-e-Iqbal town Karachi.

Sample size estimation

Previous studies indicated 11.8% of students endured poor sleep quality due to high screen use[27]. Using this prevalence and 95% confidence interval and a 3 % margin of error, the computed sample size was 450 by NCSS PASS version 3.0. Adding an attrition rate of 20%, the final sample size was 563. A total of 600 undergraduate students were approached in colleges and universities of Gulshan Town, Karachi.

Study Parameters

The research instrument was comprised of 3 parts i) demographic profile, ii) Sleep quality measures and iii) Screen time usage measures. The description of each part is mentioned below:

Demographic profile

Questions regarding demographic profile were included, age of the subject, gender of the participant i.e. Male or female, Address to know the residency area of the student, marital status to determine the impact of the pressure of household on participant's studies and having less time for use of the screen, household income, occupation of the father or guardian, Number of persons living in your room, living conditions (quality of life), illness, Number of Sibling/Order of Birth, Mobile internet or Wi-Fi, Mostly used app, Name of College or University to which student belongs, College or University Year which the student is studying, CGPA/Grade/Percentage in last Year or semester to know to the impact of screen time and sleep on the student.

Sleep quality measures

Sleep quality was measured by the Pittsburg sleep quality questionnaire, which relates to the habits of sleep in the last month. It had questions regarding sleep patterns, the time has gone to bed, the time needed to fall asleep, waking time in the morning, hours slept, having trouble in sleep in the last month, how many times taken medicine in the last month, trouble staying awake, problem to keep enthusiasm to do things, rate your quality of sleep.

The Pittsburgh Sleep Quality Index (PSQI) questionnaire is used to calculate the quality and patterns of sleep. It distinguishes "poor" from "good" sleep quality of past month by calculating the score of seven questions: time gone to bed, time taken to fall asleep, time woke up in the morning, time of actual sleep, time on the bed, trouble in sleeping because of (a) can't sleep in 30 minutes, (b) woke up in mid-night or early morning, (c) go to the bathroom, (c) can't breathe comfortably, (d) cough or snore loudly, (e) feel cold or hot, (f) bad dreams, (e) have pain, the medicine used for sleep, troubles staying awake during activities, the problem being enthusiastic to do work subjective sleep quality, the ranking of the sleep as 0 means very good, 1 fairly good, 2 fairly bad, 3 very bad.

A sum up the score of "5" or bigger is suggestive of **poor sleep quality**.

Screen time usage measures

Screen time was measured by the HELENA questionnaire. In this questionnaire, we have asked time spent on Television, computer games, playing video games, surfing the internet. HELENA questionnaire gives the number of hours consumed on Television, computer games, playing video games, surfing the internet during weekdays and weekends the higher the number of hours the more is the screen time.

Reliability and Validity of Questionnaires

The validity and reliability of the Pittsburg sleep questionnaire

are 0.8 Cronbach's alpha[39]. Helena's study questionnaire shows a good agreement of >0.7[40].

Study Variables

Screen time is an independent variable and sleep quality is dependent.

Covariates

Student's BMI, socioeconomic status (household income, parent education,) living conditions, illness, persons sharing rooms, stress, depression, anxiety, and physical activity.

Ethical Considerations

Permission from the principals of the colleges and the Dean of the faculty and directors of the institutes in universities were taken. Informed written consent was taken of each student; the study was explained to them verbally. All the personal information will be ensured to keep confidential.

Data Collection

We have approached the students in two colleges of Gulshan town and Dow University of Health Sciences two deanships were chosen randomly. The approval was taken from the competent authorities to research institutes and colleges. Students were reached in the classroom with the help of the administration and teachers of the colleges and universities. The questionnaire was explained to the students and they filled it with their consent. Data were collected and then analyzed for results.

Data was conducted by visiting different colleges and universities in Gulshan town. Permission was taken from principals of colleges and deans of universities. Informed written consent was signed by each participant, the students that were younger than 18 years there consent form was signed by there guardian. Students were approached by inspecting colleges and universities. As departments which are selected through cluster sampling were visited and students attending classes were approached by contacting to focal persons. These questionnaires were filled with them. Study objectives, benefits and discomforts were demonstrated verbally.

Statistical Analysis

Data was entered and analyzed in IBM SPSS v. 21. Descriptive statistics of continuous variables such as age, study duration, screen time use period were expressed with mean with standard deviation while categorical variables such as gender, sleep quality and disorder will be reported as the frequency with percentages.

At the preliminary stage of the inferential statistics application, the chi-square test was executed to check the association between categorical outcomes and other characteristics. Univariable logistic regression was run to assess the relationship with sleep quality and other factors, including age, income, parent's education, screen time use, type of screen uses, etc.

RESULTS

Demographic Details

Out of the total 600 participants, the mean age in the study was 18.62 ± 1.5, with the gender distribution as 268 (44.7%) Male and 332 (55.3%) female were reported. Students sharing room with their family median was reported as 2 persons in a room.

Family Details

Average number of years of education of student's mothers were 8.76± 6.18. Education of fathers of students mean was 11.67 ± 4.90. In occupation mostly fathers that is 215 (35.8%) were self-employed, and 188 (31.3%) had private job. The mean of income of the guardian was 63,562 ± 60,433 rupees per month. (Table n. 1)

Table 1. Family status variables

		N	%
Education of Mother in years			8.76 ± 6.2
Mother occupation	housewife	549	91.5%
	Employed	51	8.5%
Education of Father in years			11.67 ± 4.9
Father Occupation	Self Employed	215	35.8%
	Private	188	31.3%
	Labor	49	8.2%
	Govt. Employee	81	13.5%
	Engineer	26	4.3%
	Other	41	6.8%
Number of brothers and sisters			3.68 ± 1.9
Student's Number in brothers and sisters			1.92 ± 1.2
Income of guardian on average			63,562 ± 60,433
Persons living in a single room		1.82	± 1.1

Health Status

Chronic illness was reported in 28 (4.7%) students. 85 (14.2%) students said they use medication that enhances sleep. The mean weight of students was 56 ± 11.7 kg and height as 160 ± 10 centimeters. 347 students report that they were not encountering any depression while 253 (42.2%) had depression. Anxiety was self-reported by 238 (39.7%) and stress by 325 (54.2%). 145 (24%) performed exercise daily, 139 (23.2%) report that that performed exercise 1 to 2 times and same students performed few times exercise per week 133 (22.2%) exercised less than once and 44 said they performed

3 to 5 times exercise. 328 (54.7%) performed light, 146 (24.3%) performed vigorously and 126 (21%) report they performed mild exercise. Daily exercise time was reported as 190 (31.7%), 144 (24%), 134 (22.3%), and 132 (22) as they do exercise from 10 to 20 min, over 30 min, from 20 to 30 min, and less than 10 min respectively.

Life Quality Determinants of Students

Life quality of students was reported as, 179 (29.8%) students said they got perfect health services from their guardians, while 396 (66%) said they had good health services and only 25 (4.2%) report poor health services. House condition was reported as 364 (60.7%) good, 214 (35.7%) perfect, and 22 (3.7%) as bad. Education service received by students from guardian was reported as 364 (60.7%) good, 223 (37.2%) perfect, and 13 (2.2%). Transportation received from guardians was reported as 381 (63.5%) good, 113 (18.8%), and 106 (17.7%) as perfect and bad respectively. Electricity service was reported as 332 (55.3%), 140 (23.3%), and 128 (21.3%) as good, perfect, and good respectively. Water sanitation was reported as 359 (59.8%) good, perfect as 166 (27.7%), and 75 (12.5%) as bad.

Internet Use By Students

The distribution of the type of internet was 47 (7.8%) did not use the internet, mobile internet was used by 138 (23%), Wi-Fi was consumed by 408 (68%) the most by students and 7 (1.2%) report they availed cable net service. The use of the application was reported as 153 (25.5%) report use of WhatsApp, 134 (22.3%) report no use of the application, 95 (15.8%) said they use multiple applications, 89 (14.8%) use Facebook, 59 (9.8%) use YouTube. Instagram was used by 43 (7.2%) and 27 (4.5%) said other application software.

Screen Time Use

Students watching television on weekdays 25 (4.2%) students watched for greater than 2 hours. At weekends the frequency of the TV watching greater than two hours increased to 67 (11.2%). Computer games played for greater than 2 hours by students on weekdays were 33 (5.5%) and in the weekend by 59 (9.8%). Students who played video games for greater than 2 hours on weekdays were 27 (4.5%) and on weekends 58 (9.7%). Use of internet for hobbies for greater than 2 hours on weekdays was 58 (9.7%) while in the weekend was 120 (20%) students. The use of the internet for more than 2 hours of studies was 191 (31.8%) and on the weekend were 191 (31.8%) students. Students who studied for more than 2 hours on weekdays were 322 (56.2%) students, while on weekends were 376 (62.7%). By adding all types of screens used by students, the mean of total screen time of students on weekdays was 5.19 ± 3.08 hours and at the weekend was 6.94 ± 3.91 hours. A further 498 (83%) says they have higher than 2 hours of screen time on the weekdays and weekend 538 (89.7%) students. (Table n.2)

Table 2. Screen Time Variables

		N	
Watching TV on weekdays	<2 h/d	575	95.8
	>2 h/d	25	4.2
Watching TV on a weekend	<2 h/d	533	88.8
	>2 h/d	67	11.2
Computer games on weekdays	<2 h/d	567	94.5
	>2 h/d	33	5.5
Computer games at the weekend	<2 h/d	541	90.2
	>2 h/d	59	9.8
Video games on weekdays	<2 h/d	573	95.5
	>2 h/d	27	4.5
Video games in weekend	<2 h/d	542	90.3
	>2 h/d	58	9.7
Internet for hobbies on weekdays	<2 h/d	513	85.5
	>2 h/d	87	14.5
Internet for hobbies on the weekend	<2 h/d	480	80.0
	>2 h/d	120	20.0
Internet for Studies on weekdays	<2 h/d	462	77.0
	>2 h/d	138	23.0
Internet for Studies in weekend	<2 h/d	409	68.2
	>2 h/d	191	31.8
Time for studies on weekdays	<2 h/d	278	46.3
	>2 h/d	322	53.7
Time for studies at the weekend	<2 h/d	224	37.3
	>2 h/d	376	62.7
Total Screen Time on weekdays		5.19 ± 3.08	
Total Screen Time weekend		6.94 ± 3.91	
Total Screen Time on weekdays	<2 h/d	102	17.0
	>2 h/d	498	83.0
Total Screen Time Weekend	<2 h/d	62	10.3
	>2 h/d	538	89.7

Sleep Quality Of Students

According to the Pittsburg Sleep Quality Questionnaire, the mean total hour of sleep was 6.7 ± 1.5. The students rate their sleep as 181 (30.2%) says they have a very good sleep, 259 (43.2%) says they have a fairly good sleep, 118 (19.7%) says they possess fairy bad sleep and 42 (7%) say they have bad sleep.

The Mean Cumulative score of the components of the questionnaire was 7.47 ± 3.56, while 174 (29%) have Normal Sleep quality and 426 (71%) have poor sleep according to the questionnaire (Table n.3)

Table 3. Sleep quality of students

Pitsburg Questionnaire		n	%
Time in hours of sleep		6.7 ± 1.5	
Rating of sleep quality	very good	181	30.2
	fairly good	259	43.2
	fairly bad	118	19.7
	very bad	42	7.0
Cumulative Score of Components		7.47 ± 3.56	
Sleep quality score group	Normal Sleep Quality	174	29.0
	Poor Sleep quality	426	71.0

Comparison of Sleep Quality With Different Factors

Demographic Characteristics:

Students' age mean was not significantly affecting the sleep quality of the students (P=0.345). The mean age in students with poor sleep was 18.66 ± 1.51. Logistic regression analysis reported that there were 1.063 times higher chances of poor sleep. (OR: 1.063, 95% CI: 0.947-1.194).

The proportion was least in males (70.5%) and higher in females (71.4%). The student's gender was not significantly affecting the sleep quality of students (P=0.817). Logistic regression revealed that there were 0.959 times fewer chances for females to have poor sleep quality than males. (OR: 0.959., 95% CI: 0.673-1.367).

Poor sleep quality has a higher proportion (84.6%) in married students and unmarried students it was least (70.7%). Marital status has no significant influence on the sleep quality of students, (P=0.817). Further analysis reveals that 2.28 higher chances of poor sleep in married as compared to unmarried. (OR: 2.28, 95% CI: 0.50-10.392).

The mean percentage of students in the last exams with poor sleep was 66.78± 9.11. P-value (P=0.002) shows a significant effect on sleep quality. Logistic regression revealed that the student's percentage has 0.968 times fewer chances of poor sleep quality (OR: 0.968, 95% CI: 0.948-0.988).

The Proportion of poor sleep in University students was 74.3% and 67.7% of college students. Students of college and universities have no significant effect on poor sleep (p = 0.07). Logistic regression shows that there were 1.384 times higher chances of having poor sleep quality in University students as compared to college students. (OR: 1.384, 95% CI: 0.971-1.973). Table 8 shows the demographic details.

Family Status

The mean education of mothers was 9.29 ± 6.14 years in poor sleep quality students. Education of mothers plays a significant role in sleep quality (<0.001). The odds ratio reports 1.049 times higher chances of poor sleep quality with the education of mothers. (OR: 1.049, 95% CI: 1.020-1.079).

Poor sleep quality proportion was higher in students whose mothers were housewives (72.9%). Occupation of mothers affects significantly the sleep quality, (p-value 0.01). The odds ratio reveals that there were 2.581 times higher chances of poor sleep-in employing mothers as compared to housewives. (OR: 2.581, 95% CI: 1.445-4.612).

12.47 ± 4.12 years was the mean of the father's education of students having poor sleep. Father's education has significant effects on sleep quality, (P-value <0.001). Logistic regression reports OR of 1.114 times higher chances of poor sleep quality. (OR: 1.114, 95% CI: 1.076-1.154).

Students whom fathers were engineers have a higher percentage of poor sleep quality (88.5%) than in private employees (77.1%), in government employee's percentage was (69.1%), and in self-employed (68.4%) and least in labor fathers (55.1%). Occupation of father reports a significant effect on sleep quality, (p-value 0.014). Students of Engineer have 3.546 times higher chances of poor sleep quality compared to self-employed (OR: 3.546, 95% CI: 1.029-12.218), and 1.560 times higher chances of poor sleep quality in students of private fathers as compared to self-employed. (OR: 1.560, 95% CI: 0.999-2.435).

The Mean of the number of siblings of students was 3.64 ± 1.98. The numbers of siblings of students do not have a significant effect on sleep quality, (p-value 0.104). Odds ratio suggest 0.37 times fewer chances of poor sleep quality with the number of siblings, (OR: 0.963, 95% CI: 0.877-1.058). Students number in siblings have a significant effect on sleep quality, (p-value <0.001) with a mean of 1.85 ± 1.23. The odds ratio suggests that there are 0.853 times fewer chances of poor sleep-in students who were younger than their siblings. (OR: 0.853, 95% CI: 0.740-0.983).

The mean was higher in poor sleep quality students 67,338 ± 66,856.7. The Incomes of guardians have a significant effect on sleep quality, (p-value 0.002). Logistic regression shows with OR of 1.0 suggests no effect on sleep quality (OR: 1.0, 95% CI: 1.0-1.0). (Table n.4)

Internet Use

The highest proportion of poor sleep quality was found in cable net (85.7%), 2nd in Wi-Fi (73%), 3rd in mobile internet (71.7%), and least in students with no use of the internet (48.9%). The type of internet used by students plays a significant effect on sleep quality (p-value 0.005). Logistic regression reveals that students using cable net use have 6.261 times higher chances (OR: 6.261, 95% CI: 0.699-56.104), Wi-Fi users have 2.827 times higher chances (OR: 2.82795% CI: 1.532-5.21) and mobile internet users have 2.649 times higher chances (OR: 2.649, 95% CI: 1.340-5.236) of getting poor sleep as compared to students who don't use the internet.

Table 4. Health Status and Sleep Quality

Health and Physical Status		Sleep quality score group				P-Value	OR	95% C.I.	
		Normal Sleep		Poor Sleep				Lower	Upper
		N	%	n	%				
Medications used, (Painkiller or anti-allergic)	No	155	30.1	360	70	0.145			
	Yes	19	22.4	66	78		1.496	0.868	2.577
Frequency Exercise did weekly	Less than once	32	20	101	76	0.088			
	Few times	41	30	98	71		0.757	0.442	1.299
	1 or 2 times	51	40	88	63		0.547	0.323	0.925
	3 to 5 times	8	20	36	82		1.426	0.601	3.380
	Daily or almost daily	42	30	103	71		0.777	0.455	1.327
The intensity of exercise done	Light exercise	77	23.7	251	77	0.001			
	Mild exercise	38	30.2	88	70		0.710	0.449	1.123
	Vigorous exercise	59	40.4	87	60		0.452	0.298	0.687
Exercise time	Less than 10 min	35	26.5	97	73	0.005			
	From 10 to 20 min	43	22.6	147	77		1.234	0.737	2.064
	For 20 to 30 min	38	28.4	96	72		0.912	0.532	1.563
	Over 30 min	58	40.3	86	60		0.535	0.321	0.891
Weight of student		56.13 ± 12.09	55.59 ± 12.41	0.836	0.999	0.984	1.014		
Height of Student		166 ± 11	163 ± 11	0.007	0.115	0.023	0.572		
Depression	No	132	38.0	215	62.0	<0.001			
	Yes	42	16.6	211	83.4		3.084	2.076	4.582
Anxiety	No	130	35.9	232	64.1	<0.001			
	Yes	44	18.5	194	81.5		2.471	1.670	3.654
Stress	No	112	40.7	163	59.3	<0.001			
	Yes	62	19.1	263	80.9		2.915	2.020	4.206
Chronic Illness	No	172	30.1	400	69.9	0.009			
	Yes	2	7.1	26	92.9%		5.590	1.312	23.814

The Highest proportion of applications was found in students who use other applications (100%), Instagram (79%), and the least proportion was found in students with no use of the application (57%). Applications used by students have a negative effect on sleep quality, (<0.001). Odds ratio defines that students who use other applications (other means goggle, browsers, gaming applications, and video applications) have 1.20E+09 times higher chances of having poor sleep quality (OR: 1.20E+09, 95% CI: 0.00), Instagram users have a 2.797 times higher chances, (OR: 2.797, 95% CI: 1.243-6.290) multiple application users have a 2.609 times higher chances, (OR: 2.609, 95% CI: 1.441-4.722) Facebook users have a 1.895 times higher chances (OR: 1.895, 95% CI: 1.066-3.369), WhatsApp users have a 1.894 times higher chances (OR: 1.894, 95% CI: 1.158-3.096) and in YouTube users, 1.558 times higher chances of being getting poor sleep (OR: 1.558, 95% CI: 0.818-2.969) when compared to students who don't use any application.

Health Status

The 78% percent of students were who take such medications have poor sleep quality. Medications (pain killers or anti-allergic) used by students have no significant effect on sleep quality, (p-value 0.145). The odds ratio reveals that there were 1.496 times higher chances of poor sleep quality in students on medications as compared to students who don't take medicines. (OR: 1.496, 95% CI: 0.868-2.577).

A higher proportion of poor sleep quality was found in students who do exercise 3 to 5 times a week (82%), 76% of students who do exercise less than once a week possess poor sleep quality, 71% of students who exercise daily or almost daily and few times have poor sleep quality. Overall, exercise frequency did not produce any significant effect (p-value 0.088). Logistic regression suggests that those who exercise 3 to 5 times a week

have 1.426 times higher chances of poor sleep when compared to students who exercise less than once a week. (OR: 1.426, 95% CI: 1.601-3.380)

77 % of students who do light exercise have poor sleep quality. Exercise type has a significant effect on poor sleep quality of students, (p-value 0.001). Odds ratio reports that there were 0.71 times fewer chances of poor sleep in students with mild exercise when compared to students who do light exercise. (OR: 0.71, 95% CI: 0.449-1.123)

A higher proportion of poor sleep was found in students who do exercise for 10 to 20 minutes and least in students who exercise for 30 minutes. Exercise time has a significant effect on sleep quality, (p-value 0.005). Odds ratio reports that students with exercise time of 10 to 20 minutes have an odds ratio of 1.2 when compared to the time for exercise less than 10 minutes. (OR: 1.234, 95% CI: 0.737-2.06) Students who do exercise more than 30 minutes have 0.535 times fewer chances of poor sleep quality. (OR: 0.535, 95% CI: 0.281-0.891)

The Mean of the weight of students was 55.59 ± 12.41 in students with poor sleep quality. The weight of students doesn't have any significant effect on sleep quality, (p-value -0.836). Logistic regression shows 0.999 times fewer chances of poor sleep quality with weight. (OR: 0.999, 95% CI: 0.984-1.104)

The Mean height of students was 163 ± 11 centimeters in students who have poor sleep. Height affects significantly

students' sleep quality, (p-value 0.007). Odds ratio reports that there were 0.115 times fewer chances of poor sleep in students with a decrease in height. (OR: 0.115, 95% CI: 0.023-0.572)

A Higher proportion of poor sleep was present in students with depression, (83.4%). Depression has a significant effect on sleep quality, (p-value<0.001). Logistic regression reveals that there were 3.084 times higher chances of poor sleep in depressed students when compared to students with no depression. (OR: 3.084, 95% CI: 2.076-4.582)

81.5% of students with anxiety have poor sleep quality. Anxiety has a significant effect on the sleep quality of students, (p-value <0.001). The odds ratio reveals that there were 2.471 times higher chances of poor sleep in students with anxiety than with no anxiety. (OR: 2.471, 95% CI: 1.67-3.654)

The Proportion of poor sleep was higher in students with stress, (80.9%). Stress in students affects significantly on sleep quality (p-value <0.001). The odds ratio reveals that 2.91 times higher chances of poor sleep in students with stress as compared to students without stress. (OR: 2.91, 95% CI: 2.020-4.206)

2.9% of students with chronic illness have poor sleep quality. Chronic illness significantly affects sleep quality, (p-value 0.009). As the odds ratio suggests that there were 5.59 times higher chances of poor sleep quality in students with chronic illness compared to students without chronic illness. (OR: 5.590, 95% CI: 1.31-23.814). (Table n.5)

Table 5. Internet use and sleep quality

Internet Status		Sleep quality score group				P Value	OR	95% C.I.	
		Normal Sleep		Poor Sleep				Lower	Upper
		N	%	N	%				
Internet type used by Student	No use	24	51.1	23	48.9	0.005			
	Mobile internet	39	28.3	99	71.7		2.649	1.340	5.236
	Wi-Fi	110	27	298	73.0		2.827	1.532	5.215
	Cable net	1	14.3	6	85.7		6.261	0.699	56.104
Application (Software) used	No app	57	40	77	57	<0.001			
	Facebook	25	30	64	72		1.895	1.066	3.369
	YouTube	19	30	40	68		1.558	0.818	2.969
	Whatsapp	43	30	110	72		1.894	1.158	3.096
	Instagram	9	20	34	79		2.797	1.243	6.290
	Multiple	21	20	74	78		2.609	1.441	4.722
	Others	0	0	27	100		1.20E+09	0.000	.

Screen Time Use

A higher proportion of poor sleep quality was found in students who watched television on weekdays for more than 2 hours, (92%). Television watching on weekdays has a significant effect on students' sleep quality, (p-value 0.018). The odds ratio suggests that there were 4.91 times higher chances of poor

sleep quality with television watching on weekdays for more than 2 hours when compared to watching television for less than 2 hours. (OR: 4.91, 95% CI: 1.15-21.1)

A higher proportion of poor sleep quality was found in students who saw television on the weekend for more than 2 hours, (91%). Television watching on the weekend has a significant

effect on students' sleep quality, (p-value <0.001). The odds ratio suggests that there were 4.68 times higher chances of poor sleep quality with television watching on the weekend for more than 2 hours when compared to watching television for less than 2 hours. (OR: 4.68, 95% CI: 1.98-11.04)

A higher proportion of poor sleep quality was found in students who use the internet for hobbies on weekdays for more than 2 hours, (93.1%). Using the internet for hobbies on weekdays has a significant effect on students' sleep quality, (p-value <0.001). Odds ratio suggests that there were 6.57 times higher chances of poor sleep quality by using the internet for hobbies on weekdays for more than 2 hours when compared with using the internet for hobbies for less than 2 hours. (OR: 6.57, 95% CI: 2.81-15.37)

A higher proportion of poor sleep quality was found in students who use the internet for hobbies on the weekend for more than 2 hours, (95%). Using the internet for hobbies on weekends has a significant effect on students sleep quality, (p-value <0.001). The odds ratio suggests that there were 10.2 times higher chances of poor sleep quality by using the internet for hobbies on the weekend for more than 2 hours when compared with using the internet for hobbies less than 2 hours. (OR: 10.23, 95% CI: 4.41-23.75)

The mean of total screen time on weekdays was 5.45 ± 2.56 hours in students with poor sleep quality. Total screen time on weekdays affects significantly poor sleep quality, (p-value <0.001). The odds ratio suggests there were 1.3 times higher chances of poor sleep quality. (OR: 1.32, 95% CI: 1.22-1.44)

The mean of total screen time in the weekend was 6.96 ± 2.80 hours in students with poor sleep quality. Total screen time on the weekend affects significantly poor sleep quality, (p-value <0.001). The odds ratio suggests there were 1.476 times higher chances of poor sleep quality. (OR: 1.476, 95% CI: 1.359-1.6)

A higher proportion was found in students with poor sleep quality and screen time more than 2 hours on weekdays, 76%. Total screen time on weekdays affects significantly poor sleep quality, (p-value <0.001). The odds ratio suggests there were 4.23 times higher chances of poor sleep quality in students whose screen time was more than 2 hours on weekdays as compared to students whose screen time was less than 2 hours on weekdays. (OR: 4.23, 95% CI: 2.66-6.72)

A higher proportion was found in students with poor sleep quality and screen time more than 2 hours in a weekend, 77.8%. Total screen time on the weekend affects significantly poor sleep quality, (p-value <0.001). The odds ratio suggests there were 24.15 times higher chances of poor sleep quality in students whose screen time was more than 2 hours on weekends as compared to students whose screen time was less than 2 hours on weekends. (OR: 24.15, 95% CI: 11.192-52.11) (Table n.6)

Table 6. Screen Time and Sleep Quality

Sleep quality score group		Normal Sleep Quality		Poor Sleep quality		P-Value	OR	95% C.I.	
		N	%	n	%			Lower	Upper
Students watching television on weekdays	<2 h/d	172	29.9	403	70.1	0.018			
	>2 h/d	2	8.0	23	92.0		4.908	1.145	21.048
Students watching television at the weekend	<2 h/d	168	31.5	365	68.5	<0.001			
	>2 h/d	6	9.0	61	91.0		4.679	1.984	11.039
Students using computer games on weekdays	<2 h/d	162	28.6	405	71.4	0.338			
	>2 h/d	12	36.4	21	63.6		0.700	0.337	1.456
Students using computer games Weekend	<2 h/d	161	29.8	380	70.2	0.214			
	>2 h/d	13	22.0	46	78.0		1.499	0.788	2.851
Students using video games on weekdays	<2 h/d	159	27.7	414	72.3	0.002			
	>2 h/d	15	55.6	12	44.4		0.307	0.141	0.671
Students using video game weekend	<2 h/d	154	28.4	388	71.6	0.333			
	>2 h/d	20	34.5	38	65.5		0.754	0.425	1.337

Sleep quality score group		Normal Sleep Quality		Poor Sleep quality		P-Value	OR	95% C.I.	
		N	%	n	%			Lower	Upper
Students using the Internet for hobbies on weekdays	<2 h/d	168	32.7	345	67.3	<0.001			
	>2 h/d	6	6.9	81	93.1		6.574	2.811	15.373
Students using the Internet for hobbies on a weekend	<2 h/d	168	35.0	312	65.0	<0.001			
	>2 h/d	6	5.0	114	95.0		10.231	4.408	23.748
Students using the Internet for Studies on weekdays	<2 h/d	145	31.4	317	68.6	0.018			
	>2 h/d	29	21.0	109	79.0		1.719	1.092	2.708
Students using the Internet for Studies at the weekend	<2 h/d	112	27.4	297	72.6	0.202			
	>2 h/d	62	32.5	129	67.5		0.785	0.540	1.139
Student's Study time on weekdays	<2 h/d	77	27.7	201	72.3	0.514			
	>2 h/d	97	30.1	225	69.9		0.889	0.623	1.267
Student's Study time at the weekend	<2 h/d	69	30.8	155	69.2	0.452			
	>2 h/d	105	27.9	271	72.1		1.149	0.800	1.651
Student's Total Screen time on Weekdays		3.78 ± 2.69	5.45 ± 2.56			<0.001	1.324	1.219	1.438
Student's Total Screen time in Weekend		4.07 ± 3.14	6.96 ± 2.80			<0.001	1.476	1.359	1.602
Student's Total Screen time on weekdays	<2 h/d	52	57.1	39	42.9	<0.001			
	>2 h/d	122	24.0	387	76.0		4.230	2.664	6.716
Student's Total Screen time in Weekend	<2 h/d	55	87.%	8	12.7	<0.001			
	>2 h/d	119	22.2%	418	77.8		24.149	11.192	52.109

DISCUSSION

The present study reveals that the mean time of sleep of students is 6.7 ± 1.5 hours. Students in Hong Kong described a mean sleep length of 7.74 h[22], proposing that they are experiencing a poor quantity of sleep, established the testimonial through the United States Department of Health and Human Services of ten hours for kids and teens[41]. Within 8.5 to 9.25 hours has been a testimonial for teens and 7-8.2 hours for grown-ups[42]. Our study also reveals that 71% of the students have poor sleep quality. Equal to two-thirds of teens (13-18 years) and grownups (19- to 29-year olds) accounted for unequal sleep on weeknights[11].

Sleep and screen

In the present study, we found the mean of Screen Time (ST) on weekdays 5.19 ± 3.08 hours and on weekends it rises by 6.94 ± 3.91 hours per day, which is quite high and it's usually in the night before sleeping. The use of technology before sleep causes delays in sleep. While former reports have detected that belated bedtimes are associated with the usage of TVs, computers, videogames, and the Internet[14].

In this study, a higher proportion of poor sleep quality was found in students who saw television on weekdays for more than 2 hours, (92%). Television watching on weekdays has a significant effect on students sleep quality, (p-value 0.018). The examines from the previous report indicate evening technology usage is related to sleep, such that more technology usage is linked with shorter sleep[11]. The outcomes from a previous study suggest that higher screen time (particularly television watching) anticipated shorter sleep length in kids[43]. In our study, we observed that a higher proportion of poor sleep quality was found in students who saw television at the weekend for more than 2 hours, (91%).

A contrary connection between ST and sleep has been demonstrated in a former report (24). It was observed that a higher proportion was found in students with poor sleep quality and screen time more than 2 hours on weekdays, 76%. ST has been supposed to be a reason for deficient and poor-quality sleep(24). A higher proportion was found in students with poor sleep quality and screen time more than 2 hours in a weekend, 77.8%.

In our study computer games played for greater than 2 hours by students on weekdays were 33 (5.5%) and on weekends by 59 (9.8%). Students played video games for greater than 2 hours on weekdays were 27 (4.5%), and on weekend 58 (9.7%). There is a previous study that did not detect scientific proof of any technological devices contributing to belated bedtimes[11].

The larger number of technological devices used in the hour earlier bed was associated with higher evaluations of troubles starting sleep[11]. The intensity of this connection was largest for inducing actions, such as utilizing videogame consoles, cell phones, and computers/laptops[11]. We observed that a higher proportion of poor sleep quality was found in students who using the internet for hobbies in weekdays for more than 2 hours, (93.1%). A higher proportion of poor sleep quality was found in students who using the internet for hobbies in weekend for more than 2 hours, (95%). In a previous study, it was measured that electronic devices used more than 4 times a week had a greater probability of sleep latency for more than one hour (34). There is another study with similar findings, which suggests that activities performed on such devices are related to delayed bedtimes[30,11,44].

Few outcomes propose that once Americans make up their mind to sleep, they have substantial troubles sleeping if they have applied inducing technologies briefly in advance[11]. It was observed that playing the computer game ahead leading to bed raised sleep latency and ensued in substantial use in former reports as an excess control[45]. In this study, we observed that use of the internet for hobbies for greater than 2 hours in weekdays was 58 (9.7%) while in the weekend was 120 (20%) students. The use of the internet for more than 2 hours for studies was 191 (31.8%) and on the weekend were 191 (31.8%) students. Students studied for more than 2 hours on weekdays were 322 (56.2%) students, while at the weekend were 376 (62.7%). Throughout all types of screens, we determined that 90% of issued reports present a substantial contrary connection on at least one of the evaluated sleep consequences[2]. Computer usage (94% of reports), unspecified screen time (91% of reports), video games (86%), and mobile devices (83%) were most systematically noted to be related to contrary sleep results[2].

A report of 2,546 teens in Belgium reasoned that teens that used television to a greater extent passed lesser time for sleep on working days, and described greater general grade of weariness[22]. Likewise, the identical connection between raised television watching and lesser sleep time was observed between teens of Spain, those were more probably to be fatigued in the dawn than in the whole day later controlling for age[46]. In this study, the outcome was that students watching television on weekdays 25 (4.2%) students watched for greater than 2 hours. On the weekend the frequency of TV watching greater than two hours increased to 67 (11.2%).

A report in the United States inquired about the connection between television watching and sleeps troubles throughout a young age. It was observed that teens watching television for 3 hours or to a greater extent in one day throughout a young age had sleep troubles to a greater extent by this age[47].

A computer using length was observed to not be linked with sleep length and sleep quality[22], A report carried in a country of Europe on 7292 teens demonstrated that greater computer use was linked in a harmful manner with sleeping won't, which in turn was related with raised sleep or sleepiness in a day (48). Physical activity, health status and poor sleep quality

The determinants of a report hint that greater ST is substantially positively correlative with anxiety, depression, psychopathological symptoms, and short sleep quality (24). Our study gets a higher proportion of poor sleep was present in students with depression, (83.4%). 81.5% of students with anxiety have poor sleep quality. Anxiety has a significant effect on the sleep quality of students, (p-value <0.001). The Proportion of poor sleep was higher in students with stress, (80.9%). Stress in students affects significantly on sleep quality (p-value <0.001).

A connection between TV watching and overweight is not established for 9 to 13-year-old kids (49). In our study, the mean of the weight of students was 55.59 ± 12.41 in students with poor sleep quality. The weight of students doesn't have any significant effect on sleep quality, (p-value 0.836).

A raised PA rank was linked with a substantial decrease in depression, anxiety, psychological distress, and short sleep between college students (24). PA is an effective cure and preventative measure for short sleep (24). Overall, exercise frequency did not produce any significant effect (p-value 0.088). In our study odds ratio reports that there were 30% fewer chances of poor sleep in students with mild exercise when compared to students who do light exercise. Students who do exercise more than 30 minutes have 50% fewer chances of poor sleep quality. Meanwhile, less PA and great ST are linked with raised hazards of mental health troubles and short sleep quality(50). Raising proof to propose that PA is linked with legion health gains (51).

Limitations

The cross-sectional study design is one of the limitations, which could not decide the association of cause-and-effect among screen watching length and sleep length, quality of sleep, and sleepiness in daytime. The self-described information retrospectively may have ensued in sub-describing. The sub-describing may have undermined the relation within the time of screening and sleep consequences. As well as, the questionnaires used in this report may not be able to precisely describe the time of screening of various screen use, as expressed by the disagreement within the entire auto-description and entire computed screen watching length. Such a disagreement may have concluded by extensively describing,

as the time of screening may be repeated when more than one device is utilized instantly. This extension describing may as well have concluded in the undermined connection that was detected within the time of screening and sleep consequences. Eventually, this report may not be extrapolated to the young one population in entire Karachi, as the sample was collected from only a single district.

Strength of Study

The present study spotlights the importance of associations of sleep quality and ST students in Karachi. The potency of this report is that it is a preliminary report that furnishes data to realize the time of use of a broad set of screens watching devices. This likewise extends the present-day image of the quality of sleep in healthy young adults in Karachi.

CONCLUSION

Karachi college and university students experiencing poor sleep and acquiring infrequent troubles with sleeping, and passing more time watching televisions, computers, mobile phones, and portable video devices. This study researched the effect of screen watching on sleep length, sleep quality, within Karachi College and University students. As negative impacts were determined within sleep length, sleep quality, and increased screen watching of multiple versions of the devices, influencing the commended level of a screen watching within university and college students are an affair of public health. Furthermore, custom-made health training programs ought to be originated based on the results of different studies to preclude university and college students from enduring the negative impacts caused by long screening times.

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