Kufa Journal for Nursing Sciences
Open Access Full Text Article

Publisher
University of Kufa, Faculty of Nursing

Received: 11 May, 2023
Accepted: 14 June, 2023
Published: 19 June, 2023
Vol. 13(1), 2023: 104 – 109

https://doi.org/10.36321/kjns.vi20231.12058

ORIGINAL RESEARCH

Influence of Electronic Use Media on Sleep Disturbance Severity among Adolescents

Wafaa Salim Abod [1], Khamees Bander Obaid [2]

[1] *Kerbala Health Directorate, Kerbela Teaching Hospital for Pediatric, Kerbala, Iraq.*
[2] *Pediatric Nursing Department, College of Nursing, University of Kerbala, Kerbala, Iraq.*

CORRESPONDING AUTHOR: Wafaa Salim Abod, Registered Nurse, Karbala Health Directorate, Kerbela Teaching Hospital for Pediatric, Iraq. Email: **wafaa.s@s.uokerbala.Edu.iq .**

ABSTRACT

Background: Adolescents' growth, cognitive development, learning, and general well-being are all affected by sleep, which is both a physiological phenomenon and a behavioral process. Adolescents' physiological and psychological development has a negative effect on their sleep, but it is also possible that access to electronic media and other outside variables like early school starts and the bedroom's surroundings also contribute to bad sleep.

Objectives: The study aims to assess influence of electronic use media on sleep disturbance severity among adolescents, to find out differences between electronic use media and sleep disturbance severity among socio-demographic characteristics of adolescents, and to find out relationship between sleep disturbance severity and socio-demographic characteristics of adolescents.

Methodology: A descriptive design was used to guide this study. Data were collected for the period of October 10th, 2022, to December 20th, 2023. The study was carried out through different secondary schools in Holy Kerbala city to assess the effect of excessive use of electronic media on sleep disturbances among adolescents. The samples were selected non-randomly (a convenience sample) from separate areas of the center of Kerbala Holy Governorate, where the samples were chosen from the population only because they were available to the researcher. A sample of 382 total students was chosen to obtain the data. The sample of the study includes 139 females and 243 males.

Results: The study results reveal that the mean of hours students spend in internet is less than a half spend 2-5-hours in internet use (47.4%), followed by those who spend 6-10-hours in internet use (36.3%), those who spend 11-15-hours (9.2%), those who spend less than hour in internet use (5.8%), and those who spend 16-20 hours in electronic media use (1.3%). The study results reveal that the number of hours students spend on electronic media use every day and sleep hours positively predict excessive use of electronic media (p-value = .000, .024) respectively. The study results reveal that the sleep hours negatively predict sleep disturbance (p-value .004). On the other hand, excessive use of electronic media positively predict sleep disturbance (p-value = .000).

Conclusion: The majority of participants in the current study believe that sleep disturbances are strongly correlated with excessive use of electronic media and that the more excessive use of electronic media, the higher the incidence of sleep disturbances.

Keywords: Influence, Electronic Use Media, Sleep, Disturbance Severity, Adolescents.

How to Cite: Abod, W. S., & Obaid, K. B. (2023). Influence of electronic use media on sleep disturbance severity among adolescents. *Kufa Journal for Nursing Sciences, 13*(1), 104–109. https://doi.org/10.36321/kjns.vi20231.12058

INTRODUCTION

Adolescence is a distinct period of transition from dependent childhood to independent adulthood, and it marks the beginning of a person's journey toward good health. Adolescents also go through a rapid period of physical, cognitive, and psychological development [1].

One of the biggest populations of technology users are adolescents. Students interact with one another using electronic media. Globally, the use of electronic media is expanding at an unheard-of rate. Adolescents today are unduly reliant on electronic media, which raises doubts about how this will affect adolescents' physical and mental development [4, 7].

Electronic media refers to actions carried out directly by using a computer, playing video games, or watching television, all of which involve spending time in direct contact with a screen. Television and computer usage use very little energy. The average American child watches television for roughly three hours every day [19].

Sleep disturbances are Regular sleep patterns are disrupted by a variety of conditions known as sleep disturbances. Sleep disturbances are among the most prevalent medical problems. Normal physical, mental, social, and emotional functioning can be impaired by inadequate or non-restorative sleep. A person's entire health, safety, and quality of life may be impacted by sleep issues [20].

The physiological and psychological changes that occur in adolescence have a negative effect on sleep, but it is also possible that access to electronic media and other outside variables like early school starts and unfavorable bedroom conditions contribute to poor sleep [3].

A complex interplay between the biological stage of development, genetic, behavioral, environmental, and social factors affects sleep patterns and requirements. Sleep is crucial for good health because it strengthens the immune system, lowers calorie intake, and enhances cognitive function [8,9].

Due to physiological and environmental changes, sleep significantly changes during adolescence. Adolescents' reduced sleep duration requirements, increased tolerance to sleep deprivation, and later sleep and waking hours because of a typical delayed circadian rhythm are all physiological considerations. This happens as a result of the body's melatonin, a hormone released in the evening to get ready for sleep, being released later [10].

According to the US National Sleep Foundation, adolescents (ages 13 to 18) need 8 to 10 hours of sleep per night to maintain their basic health and growth. 75% of those aged 17 to 18 say they don't get enough sleep, and young people in other wealthy nations also have this problem [11].

AIMS OF THE STUDY

The Objective of the Study aimed to assess influence of electronic use media on sleep disturbance severity among adolescents, to find out differences between electronic use media and sleep disturbance severity among socio-demographic characteristics of adolescents, and to find out relationship between sleep disturbance severity and socio-demographic characteristics of adolescents.

METHODOLOGY

A descriptive design was used to guide this study. Data were collected for the period of October 10th, 2022, to December 20th, 2023. The study was carried out through different secondary schools in Holy Kerbala city to assess the effect of excessive use of electronic media on sleep disturbances among adolescents. The samples were selected non-randomly (a convenience sample) from separate areas of the center of Kerbala Holy Governorate, where the samples were chosen from the population

only because they were available to the researcher. A sample of 382 total students was chosen to obtain the data. The sample of the study includes 139 females and 243 males.

Study Instrument:

Questionnaire of the Study: The scale was reconstructed from the scale of sleep disturbances according to the appropriate items for the sample population (Al Bana, 2007).

The questionnaire divided into three parts:

Part 1: Demographic Characteristics: contained the following items (age, gender, educational level, and socioeconomic status, the type of device used as a means of electronic media , the number of hours spent in front of electronic media, and the number of hours of sleep) .

part 2: The questionnaire of excessive use of electronic media was consisted of (15) items distributed among (3) domains: mild excessive use of electronic media 15-24, moderate 25-34, and sever 35-45.

Part 3: The questionnaire of sleep disturbances consists of (20) items distributed among (3) domains to measures Sleep disturbances severity: Mild Sleep disturbances 20-33, Moderated Sleep disturbances 34-47, and Severe Sleep disturbances 48-60.

The data of the present study were analyzed through the use of statistical package of social sciences (SPSS) version (25). Descriptive data is reported as mean standard approach Statistical analyses were performed by using SPSS, and The level of significance was set at $p < 0.05$.

RESULTS

Table (1): Participants' sociodemographic characteristics

Variable		Frequency	Percent
Age (Years)	14-15	173	45.3
	16-17	157	41.1
	18-19	52	13.6
Total Sample		**382**	
Gender	Male	243	63.6
	Female	139	36.4
Total Sample		**382**	
Socioeconomic status	Good	63	16.5
	Fair	282	73.8
	Poor	37	9.7
Total Sample		**382**	
Study stage	Middle school	239	62.6
	High school	143	37.4
Total Sample		**382**	

SD: Standard deviation

The study results reveal that the mean age is 15.90 ± 1.36; less than a half age 14-15-years (45.3%), followed by those who age 16-17-years (41.1%), and those who age 18-19-years (13.6%). Concerning the gender, most are males (63.6%) compared to females (36.4%). Regarding the families' socioeconomic status, most reported that their socioeconomic status is fair (73.8%), followed by those whose socioeconomic status is good (16.5%), and those who reported that their socioeconomic status is poor (9.7%).With respect to the school stage, most are middle school students (n = 239; 62.6%) compared to those high school students (37.4%).

Table (2): Number of hours students spend in electronic media use

Number of hours of electronic media use	Frequency	Percent
≤ 1	22	5.8
2-5	180	47.4
6-10	138	36.3
11-15	35	9.2
16-20	5	1.3
Mean (SD): 6.18 ± 3.82		

The study results reveal that the mean of hours students spend in internet is 6.18 ± 3.82; less than a half spend 2-5-hours in internet use (47.4%), followed by those who spend 6-10-hours in internet use (36.3%), those who spend 11-15-hours (9.2%), those who spend less than hour in internet use (5.8%), and those who spend 16-20-hours in internet use (1.3%).

Table (3): Sleep disturbance severity

Sleep disorder severity	Frequency	Percent
Mild	134	35.1
Moderate	222	58.1
Severe	26	6.8

The study results reveal that more than a half experience sleep disturbance moderately (58.1%), followed by those who experience sleep disturbance mildly (35.1%), and those who experience sleep disturbance severely (6.8%).

Table (4): Factors that predict excessive use of electronic media

Model	Coefficients			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
Age	-.262	.201	-.066	-1.307	.192
Number of hours your spend on electronic media everyday	.391	.070	.276	5.601	.000
Sleep hours	.287	.127	.111	2.262	.024

The study results reveal that the number of hours students spend on internet every day and sleep hours positively predict excessive use of social media (p-value = .000, .024) respectively.

Table (5): Factors that predict sleep disturbance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	.253	.254	.049	.996	.320
Number of hours you spend on electronic media everyday	-.011	.092	-.006	-.124	.902
Sleep hours	-.470	.161	-.141	-2.919	.004
Excessive use of electronic media	.479	.065	.369	7.364	.000

The study results reveal that the sleep hours negatively predict sleep disturbance (p-value .004). On the other hand, excessive use of electronic media positively predict sleep disturbance (p-value = .000).

DISCUSSION

The results of this study repeatedly shown that adolescents' reporting of sleep problems was unaffected by their age. Other research that confirmed the findings of our study shown that reporting of sleep issues varied by age, with early to mid-adolescents having less of an issue than late adolescents [2].

According to the study's findings, more than half of participants have a moderate sleep disturbance. The quantity of time spent using electronic media had an impact on the adolescents' sleep length, which was 7 hours or less. There is compelling evidence connecting the use of general electronic media and the Internet with poor sleep, including shorter sleep duration and 6 longer sleep latency [12].

According to the study's findings, excessive use of electronic media is positively predicted by the number of hours students spend using electronic media each day and by how much sleep they get. The extensive use of the internet and other electronic media may be responsible for this finding. A study of the research revealed that increasing one's online time substantially disturbs their sleep-wake cycle and increases their risk of insomnia, morning fatigue, and irregular sleeping patterns [13].

As a result of their late-night logins, they stay up later. People who experience such sleep deprivation are unable to get a full night's sleep, which causes them to feel overly tired, perform poorly in school or at work, and generally weaken their immune systems [8,14].

However, excessive use of electronic media is a strong predictor of disturbed sleep. A 2017 survey found that nearly 50% of teenagers slept for less than 6 hours per night [16], despite experts' advice that adolescents receive 7 to 9 hours of sleep every day to keep healthy [15,16]. The study's findings show that there was a statistically significant difference in the amount of sleep disturbance between the socioeconomic status groups. Further post-hoc analysis reveals that participants with low socioeconomic family status had the highest value of sleep disruption, followed by those with intermediate socioeconomic positions and those with high socioeconomic status. Adolescents who reside in low socioeconomic (SES) environments are more likely than those who do not to experience brief, poor-quality naps. This is due to socioeconomic differences in adolescent sleep. Given that the majority of adolescents suffer from sleep deprivation, these differences are alarming [17].

Also, adolescents from lower socioeconomic status families are more likely to experience negative consequences linked to sleep issues than adolescents from higher-SES families [18].

CONCLUSION

The results of the current study showed that sleep disturbance is strongly correlated with excessive use of electronic media and that the more excessive use of electronic media, the higher the incidence of sleep disturbances. Students who use alcohol and other drugs excessively often have trouble sleeping. The findings of the current study support this, came to the conclusion that excessive use of electronic media affects sleep disturbances in the majority of secondary school students and that there are differences based on gender when it comes to such use.

REFERENCES:

1. WHO. (2021). *Adolescent health*. Geneva: World Health Organization.
2. Maurya, C., Muhammad, T., Maurya, P. et al. (2022). The association of smartphone screen time with sleep problems among adolescents and young adults: cross-sectional findings from India. *BMC Public Health* 22, 1686. https://doi.org/10.1186/s12889-022-14076-x.
3. Lund, L., Sølvhøj, I.N., Danielsen, D. et al. (2021). Electronic media use and sleep in children and adolescents in western countries: a systematic review. *BMC Public Health* 21, 1598. https://doi.org/10.1186/s12889-021-11640-9.

4. Fuller, C., Lehman, E., Hicks, S., & Novick, M. B. (2017). Bedtime Use of Technology and Associated Sleep Problems in Children. *Global pediatric health*, 4, 2333794X17736972.
5. Latif, M. Z., Hussain, I., Saeed, R., Qureshi, M. A., & Maqsood, U. (2019). Use of Smart Phones and Social Media in Medical Education: Trends, Advantages, Challenges and Barriers. Acta informatica medica: AIM: *journal of the Society for Medical Informatics of Bosnia & Herzegovina: casopis Drustva za medicinsku informatiku BiH*, 27(2), 133–138. https://doi.org/10.5455/aim.2019.27.133-138.
6. Jamir, L., Duggal, M., Nehra, R., Singh, P., & Grover, S. (2019). Epidemiology of Technology Addiction among school students in Rural India. *Asian Journal of Psychiatry*, 40, 30–38. https://doi.org/10.1016/j.ajp.2019.01.009.
7. Andriyani IN, Wasim AT, Zainuddin M, Suud FM. (2020). Gadgets playing behavior of students in Indonesia. *Humanit Soc Sci Rev*. 8(1): 264- 271.
8. Garbarino, S., Lanteri, P., Bragazzi, N.L. et al. (2021). Role of sleep deprivation in immune-related disease risk and outcomes. *Commun Biol* 4, 1304. https://doi.org/10.1038/s42003-021-02825-4.
9. Krueger J, Frank M, Wisor J, et al. (2016). Sleep function: *Toward elucidating an enigma. Sleep Med Rev*. 28:46–54.
10. Al-Wandi, A. S., & Shorbagi, S. I. (2020). Sleep patterns and its relation to lifestyle habits: a study of secondary high school students in Sharjah, United Arab Emirates. *AIMS public health*, 7(3), 713–722. https://doi.org/10.3934/publichealth.2020055.
11. National Sleep Foundation. (2020). How Much Sleep Do We Really Need? *National Sleep Foundation*.
12. Pirdehghan, A., Khezmeh, E., & Panahi, S. (2021). Social Media Use and Sleep Disturbance among Adolescents: A Cross-Sectional Study. *Iranian journal of psychiatry*, 16(2), 137–145. https://doi.org/10.18502/ijps.v16i2.5814.
13. Zhang, X., Dimitriou, D., & Halstead, E. J. (2021). Sleep, Anxiety, and Academic Performance: A Study of Adolescents From Public High Schools in China. *Frontiers in psychology*, 12, 678839. https://doi.org/10.3389/fpsyg.2021.678839.
14. Maheshwari, G., & Shaukat, F. (2019). Impact of Poor Sleep Quality on the Academic Performance of Medical Students. *Cureus*, 11(4), e4357. https://doi.org/10.7759/cureus.4357.
15. Hirshkowitz, M., Whiton, K., Albert, S. M., Alessi, C., Bruni, O., DonCarlos, L., Hazen, N., Herman, J., Adams Hillard, P. J., Katz, E. S., Kheirandish-Gozal, L., Neubauer, D. N., O'Donnell, A. E., Ohayon, M., Peever, J., Rawding, R., Sachdeva, R. C., Setters, B., Vitiello, M. V., & Ware, J. C. (2015). National Sleep Foundation's updated Sleep duration recommendations: Final report. *Sleep Health*, 1(4), 233–243. https://doi.org/10.1016/j.sleh.2015.10.004.
16. Nasirudeen AMA, Lee Chin Adeline L, Wat Neo Josephine K, Lay Seng L, Wenjie L. (2017). Impact of social media usage on daytime sleepiness: A study in a sample of tertiary students in Singapore. *DIGITAL HEALTH*. 3. doi:10.1177/2055207617699766.
17. Philbrook, L. E., Saini, E. K., Fuller-Rowell, T. E., Buckhalt, J. A., & El-Sheikh, M. (2020). Socioeconomic status and sleep in adolescence: The role of family chaos. Journal of family psychology : JFP: *journal of the Division of Family Psychology of the American Psychological Association* (Division 43), 34(5), 577–586. https://doi.org/10.1037/fam0000636.
18. El-Sheikh M, Bagley EJ, Keiley M, Elmore-Staton L, Chen E, Buckhalt JA. (2013). Economic adversity and children's sleep problems: multiple indicators and moderation of effects. *Health Psychol*. 32(8):849–859. doi: 10.1037/a0030413.
19. Baum RA. (2020). Positive parenting and support. In: Kliegman RM, St. Geme JW, Blum NJ, Shah SS, Tasker RC, Wilson KM, eds. Nelson Textbook of Pediatrics. 21st ed. Philadelphia, PA: Elsevier.
20. Karna B, Sankari A, Tatikonda G. (2022). Sleep Disorder. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560720/