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A STUDY OF RELATIONSHIP BETWEEN SOCIAL MEDIA ADDICTION AND SLEEP QUALITY AMONG UNDERGRADUATE STUDENTS OF JAMMU DISTRICT

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Abstract

Background: Social media addiction is a major concern that has influenced the world and become rooted in the lives of individuals, with adolescents and young adults as the main users of social media platforms. Uncontrolled usage of social media has negative impact on college students. It leads to virtual violence among college students because they are in initial stage of life, have more autonomy and less obligations which makes them more vulnerable to social media addiction. It is a type of internet addiction where people have an excessive want to utilize social media

Aim: The purpose of the present research study is to find out the gender differences in the undergraduate students on the variables of social media usage and sleep quality. The total sample for the study is 100 students, 50 males and 50 females.

Method: The data was collected using convenient sampling technique. Independent t-test and Pearson correlation were used for statistical analyses.

Results: The findings of the study has shown that there is a significant gender difference in all the dimensions of social media usage as well as there is a significant difference in sleep quality also except sleep duration and sleep efficiency, whereas there is significant positive correlation between social media addiction and sleeps quality.

Conclusion: Female students have higher mean score in all the dimensions of social media addiction than male students. This shows that the female students have higher social media dependence and whereas both male and female have poor sleep quality.

Keyword: social media addiction, sleep quality, college students, t-test, correlation analysis.

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INTRODUCTION

Social media addiction is a term used to describe a situation where a user spends too much time on social media sites (e.g Facebook, Twitter, YouTube, Instagram) such that it negatively affects other aspects daily life like academics work, relations with others (Young, 2016).It is an individual's inability to control his or her use of the social media which eventually causes psychological, social, academics or work difficulties in a person's life (Young, 2016). Kuss and Griffiths (2017), define it is as the virtual community where the users can create individual public profiles, interact with real-life friends, and meet other people based on shared interests.The website that enables social interaction by users is considered a social media site, an online technology which has the ability to allow the users to interact and share their information online (Kuss & Griffiths, 2017). It is a form of internet addiction in which adolescence are compelled to use social media in excessive amount (Starcevic, 2013), which in turn leads to negative consequences (Blachnio, et al., 2019). Saygili (2020) defined it as a subtype of Internet addiction, including the behavior of checking and updating. According to Armagan (2013), 96.8% of the youth have social network accounts, and 71% of those adolescents spend 1-5 hours per day in these networks.

Currently social media is a very effective means of communication, education, and entertainment medium that has become an essential part of our daily life as it helps people to share their blog pages, to communicate with others through different platform, to exchange information, to make friends, to share photos and images with other users and/or to present data to users about their personal details, whereas usage of it leads to addiction when it is used compulsively and unnecessarily (Balci & Baloglu, 2018).It is one of the leading activity among young adults and signify different social media platforms

psychological changes i.e. anger, lonely and frustration and behavioral changes, i.e. sleep problems (Baanyai et al., 2017). Masthi., (2017) in a comparative study among students found that social media users in educational institutions commonly used social media applications like internet gaming, WhatsApp etc.college students who are addicted to social networking are frequently unnecessarily worried with its responses and hence they are motivated by an uncontrollable need to log in to utilize it (Andreassen 2015). Primack, et al., (2017) found that users who spend excessive time online are vulnerable to develop signs of anxiety, depression and addiction to social media.

SLEEP QUALITY

Sleep quality refers to how well you sleep (Brues, 2020).Sleep and circadian functioning are important for promoting good health (Buysse, 2014). It is a basic need of humankind, good for quality of life and health at all ages (Sahin et al., 2013). sleep quality is more efficient than sleep quantity mainly when sleeping in a defined period of time (Varkovitzky, 2021) and it is better off getting six hours of high-quality sleep than a longer period of low-quality sleep (psychology today, 2019). It has been connected with many elements including environmental factors, social life, and general health status (Thomee, et al., 2011). sleep disturbance and stress is harmful for physical and mental health and academic work, such as obesity (Arora, et al., 2014).As per, the National Sleep Foundation and the American Academy of Sleep Medicine (2019), it is an essential for academic institutions to work behind during adolescences' period, to achieve their full potential and need between 8 and 10 hours of sleep a night. Insufficient sleep was recognized and acknowledged as an important and serious health risk in adolescents (Medical Association and American Academy of Sleep Medicine 2010). According to sleep health, (2020)

the objectives of sleep health specifically includes reducing adolescent sleep loss, sleep health increase the proportion of students in grades who get sufficient sleep (defined as ≥ 8 hours), as well as lessening the unhealthy sleep behaviors (poor sleep hygiene) in adolescents. Chen and Gau, (2016) emphasized about sleep quality that students with addictive access to the social media are prone to poor sleep quality. 'Neglect of work' and 'excessive use' of such platforms was observed to be the determinant of sleep quality and growing attractiveness of smartphones together with all its innovative technology, the usage of the smartphone before it has become a routine for young adults that could persist sleep inactivity and poorer sleep quality (Yang et al., 2019). Younger generation become addicted to video games and their sleep cycle gets disturbed which affects their health such as heart health, overweight, hypertension, etc. sleep quality and sleep duration has opposite relation with social media addiction (Turel, Romashkin, & Morrison, 2016).

Gender differences between social media addiction and sleep quality

The findings of previous study demonstrated significant negative association between the degree of internet addiction and sleep quality, providing reference for educational institutes to minimize adverse effects associated with internet use and improve students' sleep quality (Chin, et al., 2019; Sohan et al., 2021). Levenson et al., (2016) found among younger students of under the age of 19-32 years that their sleep quality is correlated with excessive use of social media. There were constant extensive relations between social media use and sleep quality. The findings of the previous study showed that overuse of smartphones along with social media networks in college students is potentially addictive and will affect sleep quality negatively (Gundogmus et al., 2019). Significant correlation was found

among internet addiction and disturbed sleep quality (Gupta et al., 2020). The study revealed that as Internet addiction increased, sleep quality of female students decreased linearly and significantly (D'souza & Negahban, 2016). The findings suggest that perceived sleep quality and insomnia severity are significant mediators of problematic social media use, more psychological distress and greater daytime sleepiness were found among eveningness prone young adults (Lin et al., 2020). A negative correlation was found between sleep quality (duration) and electronic gadgets duration of use and significantly greater number of female students (71.22%) had poor sleep quality than their male students (Alsulami et al., 2018). According to previous studies, female students are reported to be highly addicted of social media and have more sleep problems and students designated themselves as social media addicts (Ayse & Nazime, 2020). Predominance of internet addiction between males and females were 20.4% and 12.9% respectively (Gupta et al., 2020). In recent stats 37.6% of females and 31.2% of males aged 16-24 choose Instagram as a social media. (Geysler, 2022) According to Great Indian Sleep Scorecard, (2022) the fear of insomnia to be higher in women at 31% as compared to men at 23%. In another previous study showing that females use their smartphone for camera, music and learning whereas males were more likely to use their smartphone for phone calling, music and video games (Vaidya et al., 2016).

Social media addiction and sleep quality

A significant relationship between social media addiction and poor sleep quality mainly explained by daytime dysfunction was found (Wolniczak et al., 2013). Female having less sleep at night, and spending more than an hour using social media before sleep were predictors of poor sleep quality (Ahmed, et al., 2020). According to the National survey on social media, (2018)

three fourth of the students spend more than one hour on social media and 22% of the students spend more than five hours on the internet. According to International telecommunication union, 2021 nearly 71% of the world social media users are initiated by students aged 15–24. A recent study (kim, et al., 2018) founded that poor sleep quality has significant relationship between less sleep time and prolonged use of social media in free time. Previous findings on social media use in general are certainly relevant when considering social media use specifically, as young people spend 54% of their time online using social media (Thompson & Lougheed, 2012). The prior study indicated the correlation that poor sleep quality was strongly associated with nighttime-specific social media use (Woods & Scott, 2016).

According to Statista, (2021) one of the more surprising social media evidences and stats is that by 2021, the monthly number of active social media users is expected to stretch 3.02 billion globally i.e. about one-third of the world's entire population. More approximations propose that by 2023, 450 million of these users are to be expected from India, while 800 million will address from China. According to India social media statistics,(2021) report the topmost social media platforms in India are youtube (85.80%), facebook (75.70%), instagram (70.60%), twitter(50.60%), linkedIn (37.70%), pinterest (34.30%), and reddit (22.10%). The most popular messenger apps in India are whatsapp (74.60%), facebookmessenger (55.00%), snapchat (33.70%), skype (29.30%), telegram (28.50%), helo (22.90%) and hike (21.30%). In previous research has revealed that social media addiction was significantly and negatively correlated with sleep quality among college students and it was high among male as compared with female (Shibhil& Akhtar, 2020). The past studies revealed that smartphone addiction was a significant predictor of sleep quality and also there is no significant gender difference in smartphone addiction and

sleep quality among university tunku abdul rahman undergraduate college students (Devi & Lee, 2020). Some prior studies found that students' sleep problem is linked with their excess use of social media and their consistent, significant and progressive connection between social media use and sleep problems (Levenson, et al., 2016). In prior study, there is a relationship between smartphone addiction and sleep problems that suggest a negative effect on college students by deteriorating sleep quality and increasing the risk of getting sleep disorders (Moattari et al., 2017).

Objectives

- To find out the gender differences in the variables of social media addiction and sleep quality among undergraduate students.
- To examine the relationship between social media addiction and sleep quality among undergraduate students.

Hypotheses

- There is a significant gender difference between social media addiction and sleep quality among undergraduate students.
- There is a significant relationship of social media addiction and sleep quality among undergraduate students.

Research Methodology

Is there any difference of social media addiction and sleep quality among undergraduate college students?

Sample

Total sample of 100 college students was collected for finding out gender differences and relationship of social media addiction and sleep quality between college students with 50 males (50%) and 50 females (50%). Participants were in the age group of 18 to

25 years. The convenient sampling was applied for collecting data.

Data collection:

Participants were given a thorough description of the questionnaire before it was administered, and students were prompted to complete the questionnaire. The participants were asked about data confidentiality.

Measures

Social Media Addiction Scale (SMAS) – Student Form (SF): This SMAS-SF was developed by Sahin in 2018. It is a 5-point likert type scale consisting of 29 items and 4 subscales. (1) virtual tolerance, (2) virtual

communication, (3) virtual problem, (4) virtual information Participants are asked to mark cross a box to indicate the extent that they agreed with each item (1= strongly disagree to 5 = strongly agree).

Pittsburgh Sleep quality index scale(PSQI): The PSQI was developed by (Buysse et al., 1989). It contains 19 self-rated questions and combined to form seven components i.e (1) sleep quality, (2) sleep disturbance,(3) sleep latency, (4) sleep duration (5) daytime dysfunction (6)use of medication and (7) sleep efficiency. The range of scoring is 0-3, 0 indicates no difficulty and 3 indicates severe difficulties.

Results and Discussion

Table 1

t-ratios of Social media addiction among undergraduate College Students

Variables	Male Students (N=50)		Female Students (N=50)		
	Mean	SD	Mean	SD	t
Virtual Tolerance	14.02	4.16	19.65	2.90	7.00**
Virtual Communication	24.45	4.69	33.62	5.12	8.35**
Virtual Problem	21.82	4.30	27.92	4.43	5.45**
Virtual Information	17.80	4.30	22.50	4.43	4.81**
Total	77.77	17.45	104.50	16.88	9.08**

Results from the table states that t-ratios have been applied to find out the gender differences in the dimensions of social media addiction and sleep quality among undergraduate college students. Observation from the table shows that the overall mean scores in social media addiction were found to be higher in the female students (M= 104.50, SD=16.88) than in the male students (M= 77.77, SD= 17.45) which shows significant gender difference in social media addiction (t = 9.08, p < 0.01). The social media addiction of students in different dimensions was also calculated and the results revealed that the female students scored higher in the mean

score of virtual tolerance (M=19.65, SD= 2.90) than male students (M= 14.02, SD= 4.16), it is also demonstrating significant differences, (t= 7.00, p < 0.01). In the dimension of virtual communication the mean score (M=33.62, SD= 5.12) of female students higher than the mean score (M= 24.45, SD= 4.69) of male students, it shows significant differences, (t = 8.35, p < 0.01). Mean scores of female students were higher in the dimension of virtual problem (M= 29.92, SD= 4.43) than male students, showing significant differences, (t= 5.45, p< 0.01). In virtual information mean score (M =22.50, SD= 4.43) of female students is higher than the mean scores (M= 17.80,

SD= 4.30) of male students, it is also signify significant differences, ($t= 4.81$, $p<0.01$). Recent studies shows that the percentage of college students aged between 15 and 24 years their social media

usage has reached 98% in developed countries (International Telecommunication Union Development Sector, 2021).

Table 2

t- ratio of Sleep quality among undergraduate College Students

Variables	Male Students(N=50)		Female Students (N=50)		
	Mean	SD	Mean	SD	t
Sleep quality	1.02	0.91	2.05	1.99	2.94**
Sleep latency	1.27	0.87	1.95	0.74	3.70**
Sleep duration	0.57	0.87	0.55	0.87	0.12
Sleep efficiency	0.57	0.98	0.47	1.01	0.44
Sleep disturbance	1.27	0.50	1.90	0.81	4.13**
Use of sleep medication	0.22	0.57	0.87	1.01	3.51**
Daytime dysfunction	1.20	0.82	1.65	1.02	2.16*
Total PSQI	6.15	2.56	8.52	2.34	4.32**

** Significant at 0.01 level *Significant at 0.05 level

Similarly, the sleep quality of students in different dimensions was calculated and the results reported that the female students scored higher in the mean score of sleep quality ($M=2.05$, $SD= 1.99$) than male students ($M= 1.02$, $SD= 0.91$), indicating significant differences, ($t = 2.94$, $p < 0.01$). In the dimension of sleep latency the mean score ($M=1.95$, $SD= 0.74$) of female students higher than the mean score ($M=1.27$, $SD= 0.87$) of male students, it shows significant differences, ($t = 3.70$, $p < 0.01$). Mean scores of female students were higher in the dimension of sleep disturbance ($M= 1.90$, $SD= 0.81$) than mean scores ($M= 1.27$, $SD= 0.50$) of male students, showing significant differences, ($t= 4.13$, $p < 0.01$). In the dimension of sleep medication mean score ($M = 0.87$, $SD= 1.01$) of female students was higher than the mean scores ($M= 0.22$, $SD= 0.57$)

of male students, it also signify significant differences, ($t= 3.51$, $p<0.01$). Mean scores of female students is higher in the dimension of sleep daytime dysfunction ($M= 1.65$, $SD= 1.02$) than mean scores ($M= 1.20$, $SD= 0.82$) male students, showing significant differences, ($t= 2.16$, $p < 0.05$). The mean score of female ($M=0.55$) and male students ($M= 0.57$) are similar in the variable of sleep duration and shows non-significant gender difference, ($t= 0.12$, $p > 0.05$). On the other hand, non-significant difference ($t= 0.44$, $p > 0.05$) is found in the dimension of sleep efficiency the mean scores of female students ($M= 0.47$) and male students ($M = 0.57$). Whereas the overall mean score of sleep quality were higher in female students ($M=8.52$, $SD= 2.34$) as compared to mean score of male students ($M = 6.15$, $SD= 2.56$), thus revealing significant difference between

male and female students ($t = 4.32$, $p < 0.01$). Prior research has shown that social media addiction is linked to a higher risk of poor sleep quality and gender difference

among college students has revealed a significant increased risk in females than in males (Yang et al., 2018).

Table-3

Inter-correlation among Female Students

Variables	Sleep quality
Social media addiction	0.362**

The association between social media addiction and sleep quality among college students was investigated using correlation analysis. Results from Table 3 reveal a positive connection between social media addiction and sleep quality ($r = 0.362^*$). Simultaneously with the finding that female college students are more prone to develop social media addiction than male students (Chiu et al., 2013). In the previous studies the gender differences, higher women (68%) have been spending social media related to men (62%), and women in the mean devote 46 mins per day on social media associated to 31 mins by men (Perrin, 2015).

Conclusion

It can be concluded from the results that there is significant gender differences in the variables of social media addiction and sleep quality. The mean score of male students is less in social media addiction and sleep quality than female students and significant gender differences has been found between male and female students in both variables. By using correlation analysis significant positive relationship was found between social media addiction and sleep quality among college students. Consistent with prior research the correlation between the extent of social media use and sleep deprivation among college students needs more attention and suggestion for reducing inappropriate use

of social media and promote sleep quality in college students (Yang et al., 2018). College students who are addicted to social networking are frequently unnecessarily worried with its responses and they are motivated by an uncontrollable need to log in to use it (Andreassen, 2015).

REFERENCES

- Alsulami, A., Bakhsh, D., Baik, M., Merdad, M., & Aboalfaraj, N. (2018). Assessment of Sleep Quality and its Relationship to Social Media Use Among Medical Students. *Medical Science Educator*, 29(1), 157-161. doi: 10.1007/s40670-018-00650-9S
- Andreassen, C. S., & Pallesen, S. (2014). Social network site addiction - An overview. *Current Pharmaceutical Design*, 20, 4053-4061. doi:10.2174/13816128113199990616.
- Andreassen, C. S., & Pallesen, S. (2015). Social network site addiction – An overview. *Current Pharmaceutical Design*, 20, 4053-61.
- Andreassen, C. S., Torsheim, T., & Pallesen, S. (2014). Predictors of use of social network sites at work-a specific type of cyberloafing. *Journal of Computer-Mediated Communication*, 19(4), 906-921. Available at: <https://doi.org/10.1111/jcc4.12085>.

- Armagan, A. (2013). Genclerin sanalalanikullanimertercihlerivekendiler inisunumtaktikleri: Birarastirma. *Uluslararası Sosyal Araştırmalar Dergisi*, 6(27), 78-92.
- Arora, T., Broglia, E., Thomas, G. N., & Taheri, S. (2014). Associations between specific technologies and adolescent sleep quantity, sleep quality, and parasomnias. *Sleep Medicine*, 15(2), 240-247. doi: 10.1016/j.sleep.2013.08.799
- Arora, T., Emma, B., Thomas, N. G., Taheri, S. (2014). Associations between specific technologies and adolescent sleep quantity, sleep quality, and parasomnias. *Sleep Medicine*, 15, 240-7.
- Banyai, F., Zsila, A., Kiralay, O., Miraz, A., Elakes, Z., Griffiths M. D., & Demetrovics, Z. (2017). Problematic social media: Results from a large-scale nationally representative adolescent sample. *PLOS One*, 12. doi.org/10.1371/journal.pone.0169839
- Bian, M., & Leung, L. (2015). Linking loneliness, shyness, smartphone addiction symptoms, and patterns of smartphone use to social capital. *Social Science Computer Review*, 33(1), 61-79.
- Blachnio, A., Przepiorka, A., Gorbaniuk, O., Benvenuti, M., Ciobanu, A.M., Senol-Durak, E., Durak, M., Giannakos, M. N., Mazzoni, E. & Pappas, I.O. (2019). Cultural correlates of Internet addiction. *Cyberpsychology, Behavior, and Social Networking*, 2(4), 258-263.
- Busse, D. J., (2014). Sleep Health: Can We Define It? Does It Matter? *Sleep*, 37(1), 9-17. <https://doi.org/10.5665/sleep.3298>
- Chen, Y. L. & Gau, S. S. (2016). Sleep problems and internet addiction among children and adolescents: A longitudinal study. *Journal Sleep Research*, 25(4), 458- 65. doi: 10.1111/jsr.12388
- D'Souza, L., & Manomani, M. S.(2019). A comparative study of instagram addiction among students pursuing dental and speech & hearing courses. *The International Journal India Psychology*, 6(1), 83-8. doi: 10.25215/0701.022
- D'Souza, L., Samyukta, A., Tejaswini, S. M. (2016). Relationship between Internet addiction and sleep quality among female students. *The International Journal India Psychology*, 6(1), 83-8.
- Devi & Lee, N. S. (2020). Relationship between smartphone addiction and sleep quality among utar undergraduate students [Doctor of Philosophy thesis, University of Tunku Abdul Rahman]. University of Tunku Abdul Rahman. <http://eprints.utar.edu.my/id/eprint/3796>
- Devi, A., Ravi., Ngam., & Lee, S. (2020). Relationship between smartphone addiction and sleep quality among UTAR undergraduates students. <http://eprints.utar.edu.my/3796/>
- Eijnden, V. D., Lemmens, J. S., & Valkenburg, P.M. (2016). The Social Media Disorder Scale. *Computer Human Behavior*, 61, 478-487.
- file:///C:/Users/ASUS/Desktop/SOCIALMEDIAADDICTIONANDSLEEPPROBLEM-A STRUCTURALEQUATION MODELLING.pdf <https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>
- Frontier Psychiatry,(2021). secondary Sleep Disorders <https://doi.org/10.3389/fpsy.2021.62940>.

- <https://www.itu.int/itu-d/reports/statistics/2021/11/15/youth-internet-use/>
- Journal of Sleep Research 2021; 30:e13076. 1- 10
<https://doi.org/10.1111/jsr.13076>
- Kim, S. Y., Kim, M. S., Park, B. Kim, J. H., & Choi, H. G. (2018). Lack of sleep is associated with internet use for leisure. *PLoS ONE*, 13(1). <https://doi.org/10.1371/journal.pone.0191713>
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction- a review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8(9), 3528-3552. doi.org/10.3390/ijerph8093528
- Levenson, J., Shensa, A., Sidani, J. E., Colditz, J. B., & Primack, B. A. (2016). The association between social media use and sleep disturbance among young adults. *Preventive Medicine*, 85, 36-41. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4857587/>, [doi: 10.1016/j.ypmed.2016.01.001](https://doi.org/10.1016/j.ypmed.2016.01.001)
- Masthi, R., Pruthvi, S., & Phaneendra, M. S. (2018). A Comparative Study on Social Media Usage and Health Status among Students Studying in Pre-University Colleges of Urban Bengaluru. *Indian Journal Community Medicine*, 43(3), 180-184. [doi: 10.4103/ijcm.IJCM_285_17](https://doi.org/10.4103/ijcm.IJCM_285_17). PMID: 30294084; PMCID: PMC6166494.
- Moattari, M., Moattari, F., Kaka, G., fahani, H. M. K., Sadraie, S. H., & Majid Naghdi. (2017). Smartphone Addiction, Sleep Quality and Mechanism. *International Journal of Cognition and Behaviour*, 1(1), 1-7. [https://doi: 10.23937/IJCB-2017/1710002](https://doi.org/10.23937/IJCB-2017/1710002).
- Naveed, S., & Nida, A. (2020): Affects of Social Media Addiction on Sleep Quality among Youth across Cultures. <https://doi.org/10.31124/advance.12318887.v1>
- Okudan, B., & Karakullukcu, O. F. (2021). The impact of university level sports education on social media addiction. *Asian Journal of Education and Training*, 7(1), 7-12. [doi: 10.20448/journal.522.2021.71.7.12](https://doi.org/10.20448/journal.522.2021.71.7.12)
- Owens, J. (2014). Adolescent Sleep Working Group; Committee on Adolescence. Insufficient sleep in adolescents and young adults: an update on causes and consequences. *Pediatrics*, 134(3), 921-32. [doi:10.1542/peds.2014-1696](https://doi.org/10.1542/peds.2014-1696)
- Patil, S. P., Ayappa, I. A., Caples, S. M., Kimoff, R. J., Patel, S. R., & Harrod, C. G., (2019). Treatment of Adult Obstructive Sleep Apnea with Positive Airway Pressure: An American Academy of Sleep Medicine Clinical Practice Guideline. *Journal Clinical Sleep Medicine*, 15 (2), 335-343. [jcsn.aasm.org/doi/10.5664/jcsm.7640](https://doi.org/10.5664/jcsm.7640)
- Perrin, A. (2015). Social Networking Usage: 2005-2015. Pew Research Center. Available at: <http://www.pewinternet.org/2015/10/08/2015/Social-Networking-Usage-2005-2015/>
- Primack, B.A., Shensa, A., Escobar-Viera, C.G., Barrett, E.L., Sidani, J.E., Colditz, J.B. & James, A.E. (2017), "Use of multiple social media platforms and symptoms of depression and anxiety: a nationally-representative study among US young adults", *Computer Human Behavior*, 69, 1-9.
- Rooij, A. J., Schoen, T. M, Eijnden, R. J, Vermulst, A. A., & Mheen, D. (2012). Video game addiction test: validity and psychometric characteristics. *Cyber psychology Behavior Social Network*, 15, 507-511.
- Saygili, D. D. (2020), Stress, coping, and social media use. *The Psychology and*

- Dynamics behind Social Media Interactions*, 241-267.
- Starcevic, V. (2013). Is internet addiction a useful concept? Australian and New Zealand. *Journal of Psychiatry*, 47, 16–19. doi:10.1177/0004867412461693.
- Statista, (2017). [Online]. Available: <https://www.statista.com/statistics/278341/number-of-social-network-users-in-selected-countries/>.
- Teklu, M., Gouveia, C. J., Yalamanchili, A., Ghadersohi, S., Caroline, P. E. Bove, M., Attarian, H. P., Bruce, K. T. (2020). Predicting Obstructive Sleep Apnea Status with the Reflux Symptom Index in a Sleep Study Population. *Wiley Online Library*, 130(12) 952-957.
- Thompson, S. H., & Lougheed, E. (2012). Frazzled by Facebook? An exploratory study of gender differences in social network communication among undergraduate men and women. *College Student Journal*, 46 (1), 88-98.
- Turel, O., Romashkin, A., & Morrison, K. M. (2016) Health Outcomes of Information System Use Lifestyles among Adolescents: Videogame Addiction, Sleep Curtailment and Cardio-Metabolic Deficiencies. *PLoS ONE*, 11(5). <https://doi.org/10.1371/journal.pone.0154764>
- Tutgun-Unal, A. (2015). *Social media addiction: A research on university students*. [Marmara University Institute of Social Sciences Journalism Department, Department of Informatics]. <https://files.eric.ed.gov/fulltext/EJ1287633.pdf>
- Vaidya, A., Pathak, V., Vaidya, A. (2016). Mobile Phone Usage among Youth. *International Journal of Applied Research and Studies*, 3(4). <https://doi:10.20908/ijars.v5i3.9483>.
- Wolniczak, I., Alonso, J., DelAguila, C., Arroyo, G. A., Stephania, R. S., Karina, P. Y., Antonio, M. A., & Ortiz, B. (2013). <https://doi.org/10.1371/journal.pone.0059087>
- Woods, H. C, & Scott, H. (2016) #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal Adolescence*, 51, 41–9.
- Yang, J., Guo, Y., Du, X., Jiang, Y., Wang, W., Xiao, D., & Guo, L. (2018). Association between problematic internet use and sleep disturbance among adolescents: the role of the child's sex. *International journal of environmental research and public health*, 15 (12), 26-82.
- Yang, S. Y., Chen, K. L., Lin, P. H., & Wang, P. Y. (2019). Relationship among health-related behavior, smartphone dependence and sleep duration in female junior college students. *Social Health Behavior*, 2-26.
- Yilmaz, D., Tangikulu, F., & Dikmen, Y. (2017). Research on sleep quality and the factors affecting the sleep quality of the nursing students. *Current Health Sciences Journal*, 43 (1), 20-24.