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Relationship between Social Media Use and Sleep Disturbance among Adults in Afghanistan

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ABSTRACT

This study aimed to investigate the impact of excessive social media use on sleep and mental well-being among adults in Afghanistan. An online survey was conducted across 19 provinces in Afghanistan to assess social media usage and its effects on sleep. 407 Afghan adults participated in the survey and were asked about their usage patterns, perceived addiction, and impact on their sleep quality and mental well-being. The survey revealed that many Afghan adults exhibited excessive social media usage and showed signs of addiction. $\frac{3}{4}$ participants reported a strong urge to use social media. Social media usage, particularly before bedtime, significantly affected sleep patterns and mental well-being. 68% of participants identified social media as a problem. A direct correlation was observed between the duration of social media usage and sleep disturbances, with increased usage leading to poor sleep quality and difficulty concentrating on daily activities. This study highlights the need for awareness and interventions to address the harmful effects of excessive social media use on sleep and mental well-being. Mental health professionals, policymakers, and health organizations are urged to collaborate and develop strategies to promote mental well-being and address the issue of excessive social media usage.

INTRODUCTION

When well-rested, we can better manage our thoughts, feelings, and behaviors, which happens when we sleep better at night (Perry Dr. *et al.*, 2013)¹. However, in the modern world, various factors disrupt the establishment of healthy sleeping patterns, and one such factor, which remains relatively unknown, is the excessive use of social media on screens (Garett *et al.*, 2016)²; this phenomenon is rapidly growing worldwide, particularly in developing countries like Afghanistan, where people have limited access to education and are largely unaware of the detrimental effects of excessive social media usage on their overall well-being (Facebook Aware of Instagram's Harmful Effect on Teenage Girls, Leak Reveals | Instagram | The Guardian, n.d.)³. In Afghanistan, adults primarily utilize social media for entertainment purposes, such as viewing videos, photos, status updates, and news, rather than for educational or research purposes (Afghanistan - Media Landscapes, n.d.)⁴.

Some individuals cannot read or write, rely solely on images to identify others and become dependent on social media platforms. Numerous studies have affirmed that spending excessive time on social media platforms can profoundly impact social relationships, mental well-being, and various aspects of daily functioning, including sleep disruption, anxiety, depression, feelings of isolation, and decreased focus (Hou *et al.*, 2019; Savci & Aysan, 2016; Seabrook *et al.*, 2016)⁵⁻⁷.

The prevalence of "nomophobia," or the fear of being without a mobile phone, further exacerbates the issue, as individuals feel compelled to constantly stay connected to social media to remain abreast of current events and developments within their communities, country and the world at large, potentially leading to addiction disorders

(Al-Barashdi *et al.*, 2015; Bhattacharya *et al.*, 2019)^{8,9}. The duration of social media usage directly correlates with its negative impact on mental well-being, particularly sleep quality; the longer individuals engage with social media platforms, the greater the disturbance it poses to their sleep and cognitive function (Al-Barashdi *et al.*, 2015; Pirdehghan *et al.*, 2021)^{8,10}. Social media usage may disrupt sleep in several ways, such as by dislodging sleep, promoting physiological activity, or delaying circadian rhythms because of the bright light from devices (Cain & Gradisar, 2010; Scott & Woods, 2018)^{11,12}.

Social media has increasingly infiltrated the daily lives of many Afghan adults, most unaware of their dependence and addiction, consequently jeopardizing their social interactions and personal lives (Afghanistan - Media Landscapes, n.d.)⁴. Therefore, to demonstrate the adverse effects of social media on the quality of life, it is essential to undertake scientific research to investigate the relationship between social media usage and sleep disorders. This study aimed to ascertain how much Afghan adults spend on social media and its potential effects on their sleep duration and quality.

Additionally, this research examined the association between prolonged and reduced social media usage and their respective negative implications for sleep quality among adults. The findings of this study will raise awareness of excessive social media usage and its detrimental effects on mental health, sleep patterns, and overall well-being. Mental health professionals, policymakers, and health organizations can utilize these findings to address this issue and promote public awareness regarding the addictive nature of social media usage and its negative consequences on individuals' mental health and sleep habits.

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LITERATURE REVIEW

Websites that allow users to create profiles and show their relationships with other users are called social media platforms (Boyd & Ellison, 2007)¹³. Social media are now integral to our lives and are used for communication, news, business, and pleasure (Worley, 2018)¹⁴. According to a report from the Statista website, there are 4.8 billion social media users worldwide, approximately 59.4% of the global population (Social Media: Worldwide Penetration Rate 2023 | Statista, n.d.)¹⁵. This means that six out of ten people worldwide use social media, which keeps growing (Digital 2020: Global Digital Overview - DataReportal – Global Digital Insights, n.d.; Social Media Statistics & Facts | Statista, n.d.; Kim *et al.*, 2006)^{16–18}. Social media platforms serve many purposes, such as staying connected, seeking information, and providing entertainment. They are crucial in people's daily lives (Lin & Lu, 2011)¹⁹. However, excessive use of social media can negatively affect health and well-being by disrupting sleep patterns. Sleep is essential to both physical and mental health. (Loft & Cameron, 2014)²⁰.

There is much attention on the potential adverse effects of screen use and social media on health (Gruber *et al.*, 2012; Perry Dr. *et al.*, 2013; Sikder & Rhein-Waal, n.d.)^{1,21,22}. Studies have found that spending too much time on social media is associated with mental health problems such as stress, anxiety, depression, sleep disturbances, and low self-esteem (Seabrook *et al.*, 2016)⁵. Excessive use is widespread among young people, but we do not know much about how it affects their ability to sleep (van den Eijnden *et al.*, 2021)²³. Excessive or addictive social media usage can be described as a behavioral addiction in which individuals become excessively preoccupied with social media platforms. This addiction is characterized by an irresistible compulsion to frequently access and engage with social media, resulting in substantial time and energy being dedicated to it, disrupting essential areas of life (Social Media Addiction: Recognize the Signs, n.d.)²⁴. Many studies in developed countries have focused on the relationship between social media use and mental health problems in various groups of people (Hou *et al.*, 2019; Savci & Aysan, 2016, 2017; Selfhout *et al.*, 2009)^{6,7,25,26}, mainly in young individuals (Glazzard & Stones, 2020)²⁷. These studies have also shown that excessive social media use disrupts sleep patterns and duration, which negatively affects performance, mood regulation, communication, thinking, comprehension, and overall health (Al *et al.*, 2023; Fredriksen *et al.*, 2004; Gruber *et al.*, 2012; Wolfson & Carskadon, 1998)^{21,28–30}. Most of these studies found a positive link between social media use and mental health problems. However, an earlier study conducted in 2002 found a negative relationship between internet addiction and depression, which is not a widely accepted concept (Shaw & Gant, 2002)³¹. In this study, we specifically focused on how excessive social media use affects sleep disturbances among Afghan people. Sleep is crucial for health and well-being (Sikder & Rhein-Waal, n.d.)²² but is often overlooked in public health messages and education

(Gruber *et al.*, 2012; Perry Dr. *et al.*, 2013)^{1,21}.

A study conducted among university students in Khust Province, Afghanistan, found that many students were addicted to social media, which positively correlated with depression. The more addicted they were, the more signs and symptoms of depression they showed (Haand & Shuwang, 2020)³². Social media disrupts sleep in three ways: displacing sleep time (Cain & Gradisar, 2010; Levenson *et al.*, 2017)(Cain & Gradisar, 2010; Levenson *et al.*, 2017), delaying sleep, and promoting physiological activity (Scott & Woods, 2018)¹². Research has also shown that social media use reduces sleep quality by creating a constant urge to control and influence behavior (Pea *et al.*, 2012)³⁴.

A study among young American adults showed that participants with higher social media usage had a higher risk of sleep disruption (Levenson *et al.*, 2016)³³. An Italian study of junior and senior high school students found that female students had higher phone and social media engagement. The study also found that using mobile devices near bedtime had a positive relationship with sleep problems (Almeida *et al.*, 2023; Bruni *et al.*, 2015)^{35,36}. Sleep problems are linked to depression, negative social relationships, and poor school performance (Alfano *et al.*, 2009)³⁷.

Additionally, individuals with sleep problems often experience symptoms of anxiety, reduced cognitive function, and a weakened immune system (Stickley *et al.*, 2019)³⁸. Inadequate sleep increases the risk of chronic conditions such as obesity, diabetes, and cardiovascular disease. Therefore, addressing and managing sleep disturbances is vital to improving overall well-being and various aspects of life (Sleep and Chronic Disease | CDC, n.d.)³⁹.

METHODOLOGY

A simple random sampling method is used in this study. A self-reported English questionnaire was prepared for data collection from different studies. A professional translator translated the questionnaire into the local language (Pashto). The research study, method, and questionnaire were reviewed and approved by the research and ethics committee of the Medical Faculty of Bost University; Reference number: BostEthics-0751, meeting number 4, conducted on 26 June 2023.

The questionnaire was adjusted into a Microsoft format to be shared online with prospective participants, which everyone could access. The questionnaire was shared through different social media platforms and groups for data collection from 10 July 2023 to 23 July 2023. The questionnaire was easy to complete; on average, it took 9 minutes and 30 seconds for every person to complete it. It is important to note that before submitting their responses, consent was obtained from each participant, and they were duly informed about the purpose of the study. The participants were assured that their confidentiality would be protected. Those unwilling to participate had the right to refuse and were not obligated

to participate in the study. No financial or other incentives were provided to students to complete the survey.

According to the unknown population sample size formula (Gupta *et al.*, 2016) (40), the sample size was calculated as 385.

Infinite population sample size formula $s = z^2 * P(1-p) / M^2$
Where,

S = Sample size

Z = Given Z value = 1.96 (confidence level 95%)

p = population proportion (assumed to be 50% = 0.5)

M = margin of error = 5%

Pop = Population

Infinite population sample size formula

ones = $z^2 * P(1-p) / M^2$

$s = (1.96)^2 * 0.5(1-0.5) / (0.05)^2$

$s = 3.8416 * 0.25 / 0.0025^2$

$s = 384.16$

To be more accurate, the sample size was increased to 407 respondents. The sample size was limited to adults, the society's most active social media group.

The data were analyzed using Microsoft Forms, Microsoft Excel, and Microsoft Access.

Data Analysis

A total of 407 survey respondents from 19 different provinces of Afghanistan completed and submitted

survey forms. Of these, 54 were female, 353 were male (13% female; 87% male), and most (293 survey participants) were aged 18–32. Regarding education level, all participants were educated as they completed the survey forms; among the 407 survey participants, 357 (88%) were undergraduate degree students or completed undergraduate degree studies.

All the respondents used social media for different purposes and durations during the day and night, as the statistics are as follows:

I) 117 out of 407 (28.7%) used social media for four or more hours.

II) 82 out of 407 (20.1%) users used social media for 3 hours.

III) 93 out of 407 (22.8%) participants used social media for two hours.

IV) 88 out of 407 (21.6%) users used social media for one hour.

V) 27 out of 407 (6.6%) participants used social media for 30 minutes or less.

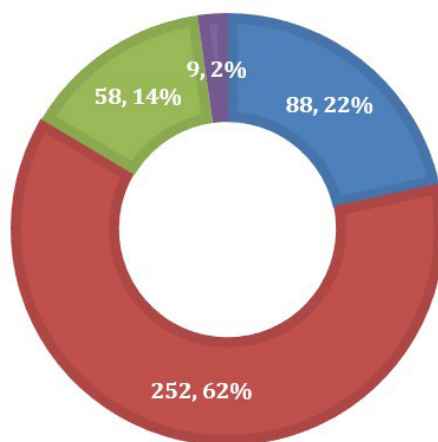
This suggests that a significant proportion of the participants relied heavily on social media in their daily lives.

After comparing the duration of social media usage and sleep quality, as shown in Table 1, we found that more extended social media usage is directly linked to sleep disturbance, sleep quality, and nightmares.

Table 1: Social Media Usage Linked to Nightmares and Sleep Quality

Total # Participants	Social media usage duration	Social media has a negative effect on my normal sleep.	Nightmare	Sleep Quality			
				Very good	Good	Bad	Very bad
117	4 hours or more	85	56	23	61	29	4
82	3 hours	62	29	14	55	11	2
93	2 hours	71	34	23	62	6	2
88	1 hour	62	21	19	59	9	1
27	30 minutes or less	19	8	9	15	3	0

■ Very good ■ Good ■ Bad ■ Very bad



IN THE LAST MONTH, HOW DO YOU ASSES YOUR SLEEP QUALITY?

Figure 1: Sleep quality of participants considering last month

A question that asked participants to assess their sleep quality in the previous month was answered as follows (Figure 1): As shown in the following Table 2, 87% of the

respondents (353 out of 407) admitted using social media before bed. However, they also expressed enthusiasm for daily activities instead of using social media before bed.

Table 2: Social media usage before bed

Using social media before bed						
Total respondents:	# Respondents	Duration	Enthusiasm for daily activities			
			Very often	Sometimes	Rarely	Very rarely
353 out of 407	202	1 hour	15	30	89	68
	94	1-2 hours	18	24	31	21
	49	Two or > hours	17	11	13	8

If your sleep is being negatively affected because of excessive use of social media, please write down the effects:
Respondents' comments: (Mostly repeated comments are compiled in this chart.)
No restful sleeping and headache.
No or less sleeping, anxiety, and depression.
I was being mentally and physically fatigued and being lazy.
Restlessness and loss of focus on daily activities
Abnormal sleeping and cannot wake up in the morning quickly.
Eye problems and heavy head.
I cannot wake up in the morning and have a lazy day with worries regarding sad news which I have seen on social media.
Sleep disturbance and nightmares with no focus.
Loss of focus and inability to study, which ends with depression.
Stress and engagement with what I see on social media are repeatedly coming to me, which distresses me.
I am pretty good, with no adverse effects, as I use it for a limited time.
Can not fall asleep quickly, in reverse in the morning, cannot get up quickly.
Irregular sleeping cycle
Before sleeping is fine with me, but I cannot fall asleep if I use social media after midnight.
Seems always tired.
Can not offer the prayer of the morning because of late sleeping
The negative and bad news about the country, especially the videos of poor people, make me cry and fall asleep late, this causes me to be tired and sleepy tomorrow.
Black circles around the eye and miss the morning offer prayer, a sign of unfortunate.
No regular sleep and being stressed.
Anxiety with being lazy and dull.

Table 3: Feeling the urge to use social media

Feeling an urge to use social media			
Total Respondents:	Rarely	Some Time	Very often
407 (100%)	78 (19%)	174 (43%)	155 (38%)

Of the 407 or 73% of participants, 299 mentioned that social media negatively affected their normal sleeping process and mental health, and they commented on their adverse effects below to an open question. Therefore, to fall asleep early and sleep well, 39 of 407 participants were taking sleeping tablets once or twice a week.

Regarding whether they (respondents) felt an urge to use social media more and more, the answer was yes, and the statistics were as follows (Table 3):

The study also revealed that those with more thirst or desire to use social media use it for long hours than those with less desire to use it (Table 4).

Table 4: Urge to use social media

Urge to use social media	Number of participants	4 hours or more	3 hours	2 hours	1 hour	30 minutes or less
Very often	155 (38%)	78	31	31	41	5
Sometime	174 (43%)	29	38	39	92	15
Rarely	78 (19%)	10	13	23	48	7

Table 5: Lose of concentration, ability to work, and communication ability

Frequency of Loss of concentration, ability to work, communicate, and perform daily activities				
Total Respondents:	Not happened	Rarely	Some Time	Very often
407 (100%)	97 (24%)	129 (32%)	115 (28%)	66 (16%)

As summarized in Table 5, Participants also reported that because of excessive use of social media, they lost their focus and ability to work, communicate, and perform daily routine activities well.

Despite falling asleep late and not sleeping adequately, 241 of 407 participants declared that they woke up in the middle of the night or early in the morning. More

than half of the participants (276 out of 407) felt that excessive use of social media was a problem for them and were trying to limit the frequency and duration of social media usage. Of 407, 202 mentioned that they successfully limited social media usage using different ways. From 202 optional comments, we share 20 of them in this article, which are selected randomly.

How do you limit the usage of social media (the ways)?
Respondents' comments:
I lifted the unnecessary social media groups, prepared a schedule for my daily routine, and am following it.
Firm intention targeted a goal I am studying for.
I did sports and paid attention to my mental and physical health after I became addicted to social media.
Giving time to my beloved family and children helped me reduce my social media usage, and I feel very well.
I am studying more and getting motivated to return to natural life rather than internet life.
I am trying to be busy with other activities and remembering how social media affects my health.
Motivated strongly and intended not to use social media.
NO activation of internet bundle.
I use my mobile just when needed, and when I feel slightly distressed because of social media, I switch off the phone.
I do busy myself intentionally with activities related to my job, so my usage of social media has decreased.
Activation of a small package of internet bundle for most needed activities.
I do not activate oversized internet packages and watch a movie before falling asleep. Watching movies makes me fall asleep in 15 minutes, and I made my habit of sleeping early and avoiding using social media.
Priorities my daily routine and study in my free time.
I watch YouTube to learn and study psychology.
Deactivation of social media accounts deactivates new internet bundles for days when the old one ends.
I limited the use of smartphones and am using a simple mobile for calling.
I turned off the notifications and used the NO Disturb mode of my mobile.
I am scheduled to use social media for 30 minutes; if it increases, I get the notification.
I have solid intentions and try to be busy with my daily routine, job, and work.

In conclusion, the study revealed that more participants were using social media for extended periods and that excessive usage had a detrimental impact on their mental well-being and sleep. It has been shown that the more people use social media, the more it impacts their sleeping length, sleeping quality, routine tasks, focus, concentration, and enthusiasm for daily activities.

In contrast, people who use social media for a shorter period have a less unfavorable influence on their sleeping mood, mental health, and sleep quality.

RESULT AND DISCUSSION

The study of 407 participants found that longer hours of social media usage are directly linked to sleep disturbance,

sleep quality, and nightmares. The study also revealed that 87% of the respondents used social media before bed, and 73% mentioned that social media negatively affected their normal sleeping process and mental health.

- 28.7% of the participants used social media for four or more hours, 20.1% for 3 hours, 22.8% for 2 hours, 21.6% for 1 hour, and 6.6% for 30 minutes or less.

- 276 out of 407 participants felt that excessive use of social media was a problem for them and were trying to limit the frequency and duration of social media usage.

- 241 of 407 participants declared that they wake up in the middle of the night or very early in the morning despite falling asleep late and not sleeping adequately.

Participants also reported that excessive use of social media caused them to lose focus and ability to work, communicate, and perform daily activities well. The study showed that more participants were using social media for extended periods, and excessive usage of social media had a detrimental impact on their mental well-being and sleep.

The findings of this study are significant for various stakeholders, including organizations, policymakers, individuals working towards mental health well-being, and frequent users of social media. This study highlights the detrimental effects of excessive social media use on sleep patterns and mental health. The positive correlation between social media addiction and reduced sleep quality indicates that individuals more addicted to social media experience lower quality sleep than those who use it for shorter durations.

The participant's comments further support the notion that excessive social media use adversely impacts daily life. Many participants reported difficulties in falling asleep, feeling tired and sleepless, facing challenges in studying and performing daily activities, increased anxiety, feelings of depression, frequent headaches, and experiencing laziness and fatigue. In addition, participants mentioned difficulties in maintaining focus and concentration.

Furthermore, several practical approaches were identified when participants were asked to provide strategies to limit their social media usage. A common theme among the participant responses was a solid intention to limit their social media usage. Activation of mini-internet packages, engaging in studying, spending quality time with family, focusing on daily activities, participating in physical exercise, creating a schedule for daily activities, and enforcing strict adherence to their self-imposed restrictions were cited as effective strategies.

These findings have practical implications for both individuals and society as a whole. By raising awareness about the negative impact of excessive social media use on sleep and mental health, this study can help guide individuals toward healthier habits. The results also call for the attention of organizations, policymakers, and mental health professionals to develop interventions and initiatives that address the growing problem of social media addiction. By incorporating these findings into public health campaigns and educational programs, we

can work towards promoting better sleeping habits and safeguarding mental health among social media users.

CONCLUSION

In conclusion, this study provides compelling evidence that social media significantly negatively impacts Afghan adults' sleep and mental health, resulting in reduced duration and quality of sleep. Moving forward, it is recommended that policymakers and organizations take proactive measures to increase awareness about the detrimental effects of excessive social media usage on health. Additionally, interventions in the form of sleep education should be implemented to assist individuals in achieving a balance between online interactions and sufficient sleep. Furthermore, future research should be conducted into other aspects of excessive social media use, including stress, anxiety, academic performance, addiction levels, and self-esteem. By understanding these factors more deeply, we can develop comprehensive strategies to address the multifaceted challenges of excessive social media usage among adults in Afghanistan. This will involve addressing the immediate sleep and mental health concerns and tackling broader issues relating to stress, addiction, and overall well-being. We can work towards creating a healthier digital environment for Afghan adults through a targeted approach that combines education, awareness, and further research.

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REFERENCE

- Afghanistan - Media Landscapes. (n.d.). Retrieved December 27, 2023, from <https://medialandscapes.org/country/afghanistan/media/social-networks>
- Al, M., Moyad, K., Nageeb, S., Ammar, H., Jairoun, A., Al Kazhali, M., Shahwan, M., Hassan, N., & Jairoun, A. A. (2023). Social media use is linked to poor sleep quality: The opportunities and challenges to support evidence-informed policymaking in the UAE. *Journal of Public Health*, 45(1), 124–133. <https://doi.org/10.1093/PUBMED/FDAB372>
- Al-Barashdi, H., Bouazza, A., & Jabur, N. (2015). Smartphone Addiction among University Undergraduates: A Literature Review. *Journal of Scientific Research and Reports*, 4(3), 210–225. <https://doi.org/10.9734/JSRR/2015/12245>
- Alfano, C. A., Zakem, A. H., Costa, N. M., Taylor, L. K., & Weems, C. F. (2009). Sleep problems and their relation to cognitive factors, anxiety, and depressive symptoms in children and adolescents. *Depression and Anxiety*, 26(6), 503–512. <https://doi.org/10.1002/DA.20443>
- Almeida, F., Marques, D. R., & Gomes, A. A. (2023). A preliminary study on the association between social media at night and sleep quality: The relevance of

- FOMO, cognitive pre-sleep arousal, and maladaptive cognitive emotion regulation. *Scandinavian Journal of Psychology*, 64(2), 123–132. <https://doi.org/10.1111/SJOP.12880>
- Bhattacharya, S., Bashar, M., Srivastava, A., & Singh, A. (2019). NOMOPHOBIA: NO MOBILE PHOne PhoBIA. *Journal of Family Medicine and Primary Care*, 8(4), 1297. https://doi.org/10.4103/JFMPC.JFMPC_71_19
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210–230. <https://doi.org/10.1111/J.1083-6101.2007.00393.X>
- Bruni, O., Sette, S., Fontanesi, L., Baiocco, R., Laghi, F., & Baumgartner, E. (2015). Technology Use and Sleep Quality in Preadolescence and Adolescence. *Journal of Clinical Sleep Medicine : JCSM : Official Publication of the American Academy of Sleep Medicine*, 11(12), 1433. <https://doi.org/10.5664/JCSM.5282>
- Cain, N., & Gradisar, M. (2010). Electronic media use and sleep in school-aged children and adolescents: A review. *Sleep Medicine*, 11(8), 735–742. <https://doi.org/10.1016/J.SLEEP.2010.02.006>
- Digital 2020: Global Digital Overview- DataReportal – Global Digital Insights. (n.d.). Retrieved December 27, 2023, from <https://datareportal.com/reports/digital-2020-global-digital-overview>
- Facebook aware of Instagram's harmful effect on teenage girls, leak reveals | Instagram | The Guardian. (n.d.). Retrieved December 27, 2023, from <https://www.theguardian.com/technology/2021/sep/14/facebook-aware-instagram-harmful-effect-teenage-girls-leak-reveals>
- Fredriksen, K., Rhodes, J., Reddy, R., & Way, N. (2004). Sleepless in Chicago: tracking the effects of adolescent sleep loss during the middle school years. *Child Development*, 75(1), 84–95. <https://doi.org/10.1111/J.1467-8624.2004.00655.X>
- Garett, R., Liu, S., & Young, S. D. (2016). The relationship between social media use and sleep quality among undergraduate students. *Information, Communication & Society*, 21(2), 163–173. <https://doi.org/10.21276/SJAMS.2018.6.8.3>
- Glazzard, J., & Stones, S. (2020). Social Media and Young People's Mental Health. Selected Topics in Child and Adolescent Mental Health. <https://doi.org/10.5772/INTECHOPEN.88569>
- Gruber, R., Michaelsen, S., Bergmame, L., Frenette, S., Bruni, O., Fontil, L., & Carrier, J. (2012). Short sleep duration is associated with teacher-reported inattention and cognitive problems in healthy school-aged children. *Nature and Science of Sleep*, 4, 33. <https://doi.org/10.2147/NSS.S24607>
- Gupta, K. K., Attri, J. P., Singh, A., Kaur, H., & Kaur, G. (2016). Basic concepts for sample size calculation: Critical step for any clinical trials! *Saudi Journal of Anaesthesia*, 10(3), 328. <https://doi.org/10.4103/1658-354X.174918>
- Haand, R., & Shuwang, Z. (2020). The relationship between social media addiction and depression: a quantitative study among university students in Khost, Afghanistan. *International Journal of Adolescence and Youth*, 25(1), 780–786. <https://doi.org/10.1080/02673843.2020.1741407>
- Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1). <https://doi.org/10.5817/CP2019-1-4>
- Kim, K., Ryu, E., Chon, M. Y., Yeun, E. J., Choi, S. Y., Seo, J. S., & Nam, B. W. (2006). Internet addiction in Korean adolescents and its relation to depression and suicidal ideation: a questionnaire survey. *International Journal of Nursing Studies*, 43(2), 185–192. <https://doi.org/10.1016/J.IJNURSTU.2005.02.005>
- Levenson, J. C., 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. <https://doi.org/10.1016/J.YPMED.2016.01.001>
- Lin, K. Y., & Lu, H. P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152–1161. <https://doi.org/10.1016/J.CHB.2010.12.009>
- Loft, M., & Cameron, L. (2014). The importance of sleep: Relationships between sleep quality and work demands, the prioritization of sleep and pre-sleep arousal in day-time employees. *Work and Stress*, 28(3), 289–304. <https://doi.org/10.1080/02678373.2014.935523>
- Pea, R., Nass, C., Meheula, L., Rance, M., Kumar, A., Bamford, H., Nass, M., Simha, A., Stillerman, B., Yang, S., & Zhou, M. (2012). Media use, face-to-face communication, media multitasking, and social well-being among 8- to 12-year-old girls. *Developmental Psychology*, 48(2), 327–336. <https://doi.org/10.1037/A0027030>
- Perry Dr., G. S., Patil, S. P., & Presley-Cantrell, L. R. (2013). Raising awareness of sleep as a healthy behavior. *Preventing Chronic Disease*, 10(8). <https://doi.org/10.5888/PCD10.130081>
- Pirdehghan, A., Khezme, E., & Panahi, S. (2021). Social Media Use and Sleep Disturbance among Adolescents: A Cross-Sectional Study. *Iranian Journal of Psychiatry*, 16(2), 137. <https://doi.org/10.18502/IJPS.V16I2.5814>
- Savci, M., & Aysan, F. (2016). Educational Process: International Journal Relationship between Impulsivity, Social Media Usage and Loneliness. *Educational Process: International Journal*, 5(2), 106–115. <https://doi.org/10.12973/edupij.2016.52.2>
- Savci, M., & Aysan, F. (2017). Social-emotional model of internet addiction. *Psychiatry and Clinical Psychopharmacology*, 27(4), 349–358. <https://doi.org/10.1080/24750573.2017.1367552>
- Scott, H., & Woods, H. C. (2018). Fear of missing

- out and sleep: Cognitive behavioural factors in adolescents' nighttime social media use. *Journal of Adolescence*, 68, 61–65. <https://doi.org/10.1016/J.ADOLESCENCE.2018.07.009>
- Seabrook, E. M., Kern, M. L., & Rickard, N. S. (2016). Social networking sites, depression, and anxiety: A systematic review. In *JMIR Mental Health* (Vol. 3, Issue 4). JMIR Publications Inc. <https://doi.org/10.2196/mental.5842>
- Selfhout, M. H. W., Branje, S. J. T., Delsing, M., ter Bogt, T. F. M., & Meeus, W. H. J. (2009). Different types of Internet use, depression, and social anxiety: the role of perceived friendship quality. *Journal of Adolescence*, 32(4), 819–833. <https://doi.org/10.1016/J.ADOLESCENCE.2008.10.011>
- Shaw, L. H., & Gant, L. M. (2002). In defense of the internet: The relationship between internet communication and depression, loneliness, self-esteem, and perceived social support. *Cyberpsychology and Behavior*, 5(2), 157–171. <https://doi.org/10.1089/109493102753770552>
- Sikder, N., & Rhein-Waal, H. (n.d.). An Overview of the Book “Why We Sleep” by Matthew Walker. <https://www.researchgate.net/publication/360973191>
- Sleep and Chronic Disease | CDC. (n.d.). Retrieved December 27, 2023, from https://www.cdc.gov/sleep/about_sleep/chronic_disease.html
- Social Media Addiction: Recognize the Signs. (n.d.). Retrieved December 27, 2023, from <https://www.addictioncenter.com/drugs/social-media-addiction/>
- Social Media Statistics & Facts | Statista. (n.d.). Retrieved December 27, 2023, from <https://www.statista.com/topics/1164/social-networks/#topicOverview>
- Social media: worldwide penetration rate 2023 | Statista. (n.d.). Retrieved December 27, 2023, from <https://www.statista.com/statistics/269615/social-network-penetration-by-region/>
- Stickley, A., Leinsalu, M., DeVylder, J. E., Inoue, Y., & Koyanagi, A. (2019). Sleep problems and depression among 237 023 community-dwelling adults in 46 low- and middle-income countries. *Scientific Reports*, 9(1). <https://doi.org/10.1038/S41598-019-48334-7>
- van den Eijnden, R. J. J. M., Geurts, S. M., Ter Bogt, T. F. M., van der Rijst, V. G., & Koning, I. M. (2021). Social Media Use and Adolescents' Sleep: A Longitudinal Study on the Protective Role of Parental Rules Regarding Internet Use before Sleep. *International Journal of Environmental Research and Public Health*, 18(3), 1–13. <https://doi.org/10.3390/IJERPH18031346>
- Wolfson, A. R., & Carskadon, M. A. (1998). Sleep Schedules and Daytime Functioning in Adolescents. *Child Development*, 69(4), 875–887. <https://doi.org/10.1111/J.1467-8624.1998.TB06149.X>
- Worley, S. L. (2018). The Extraordinary Importance of Sleep: The Detrimental Effects of Inadequate Sleep on Health and Public Safety Drive an Explosion of Sleep Research. *Pharmacy and Therapeutics*, 43(12), 758. [/pmc/articles/PMC6281147/](https://pmc/articles/PMC6281147/)