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Impact of intense social media usage on sleeping pattern

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ABSTRACT

The sleeping pattern refers to resting after a day's activities. This involves the number of hours spent sleeping and the body's overall wellbeing when performing everyday tasks. When we do not get enough sleep, it immediately affects our health. Several things, including intense social media usage, cause this unhealthy sleep pattern. The use of Social Media can affect health, both physically and psychologically. This research relies on the systematic literature review (SLR) method obtained from databases, namely Google Scholar from many countries, and data about the digital 2021 global overview report from Hootsuite & We Are Social. Of the 55 studies obtained, 41 stated that Insufficient sleep was linked to social media use, daytime sleepiness, insomnia, or sleep patterns. According to the research, excessive social media usage is related to sleep problems or disruptions. Social media usage will have a beneficial impact since it will make daily tasks easier. However, unrestricted use of social media can have a detrimental effect on sleep habits.

1. Introduction

Social media is a collection of web-based resources that enable people to exchange and spread new concepts, views, and knowledge in a more collaborative and virtual setting [1]. Social media provides numerous opportunities for collecting knowledge, entertainment, and social interaction [2], but social media users' influence on young people's sleep patterns has been a concern [3]. The relationship between social media use and sleep has been linked to three well-recognized root causes and reasons for the negative effect of cell media on sleep. Firstly, young people's use of social media could interfere with their sleep; this is known as the time displacement hypothesis [4]. Secondly, it is well understood that using social media raises arousal levels, especially when using Facebook [5]. Adolescents can find it more difficult to fall asleep due to these elevated levels of physiological arousal [6]. Thirdly, bright screen lights can disrupt melatonin production in teens who use social media [7]. According to this reasoning, individuals who use electronics that produce flashing video lights have difficulty falling asleep before bedtime. Their biological clock rhythms have been thrown off, and they have more daytime sleepiness [8].

Also, homeostatic factors, endogenous circadian factors, and behavioral factors are the three main factors that influence sleep. Behavioral factors can replace homeostatic and circadian factors. The homeostasis mechanism is a physiological and psychological condition that humans must satisfy satisfactorily. A necessity is one of the things that are essential, useful, or required to sustain homeostasis and life itself. Maslow's hierarchy as show in Fig. 1.

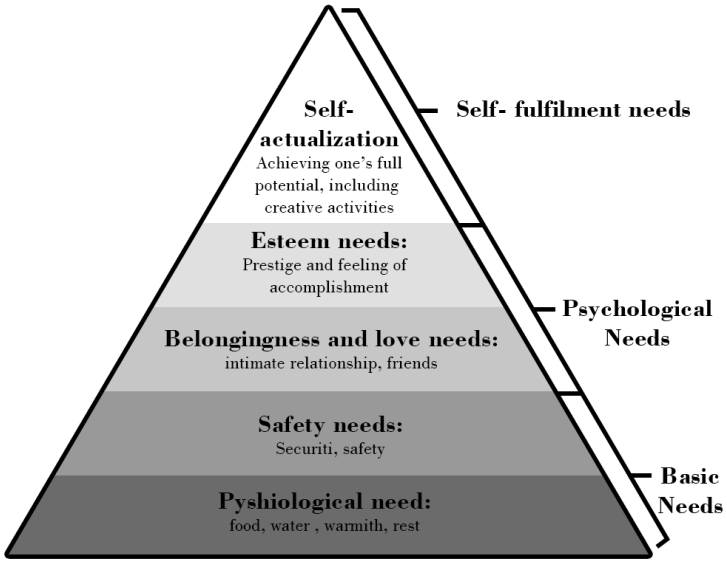

Fig. 1. Maslow's hierarchy

In Maslow's hierarchy, The pyramid's needs rise from bottom to top, with the lowest needs at the bottom and the highest needs at the top. The first layer of the pyramid represents physiological requirements. These include food, water, rest, sleep, and so forth. These have something to do with biological motivations [9]. As a result, it is critical to comprehend the factors that influence sleep. Behaviors that occur before bedtime can disrupt sleep. Sleepiness or drowsiness during the day diminishes the capacity to remain awake and aware during regular operating hours [10].

According to research findings published in April 2021, 4.66 billion people have access to the internet today, accounting for nearly 60% of the world's population. So, based on this data, we can deduce that with so much internet access, these people will naturally visit a variety of platforms, with social media being one of the most common. For example, 36,5% of global internet users aged 16 to 64 use social media to "keep up with news and current events," which is the most common reason for using social media globally. Most internet users claim this is one of the main reasons they use social media [11]. Therefore, one of the factors causing the pattern of shorter sleep duration in adolescents is excessive use of social media, incredibly late at night [12].

Sleep disturbances can occur as a consequence of heavy usage of social media, so this study is intended to present that there are a variety of related cases in different countries about the effect of intense social media use on sleep patterns, with a variety of negative consequences that can lead to poor body health. As a result, various types of people, especially Indonesians, must recognize the importance of prevention. Recent data review shows that the percentage of people who use social media in Indonesia can be inferred that many people need to be informed on when to use social media and how to avoid disrupting sleep habits for their wellbeing.

2. Method

This research is a systematic literature review that summarizes some of the related literature for the research subject. This research design is the newest approach adopted by researchers/experts to analyze research results in various reputable journals with different themes. The stage of data gathering is where analysis data was collected. Primary and secondary data were gathered in this research. In this study, the primary data taken were journals from the database. Specifically, Google Scholar and the following keywords were used in the literature search: "social media effect on sleeping pattern", "sleeping problem", and "sleeping disorder". The literature used was written between 2011 and 2021.

Secondary data is used to supplement primary data; for example, if the primary data contains only abstracts, secondary data is used to complete the primary data. Secondary data were gathered with the support of Google. Data collection in the study was obtained through several stages, including

observation and literature study from research that used the SLR method and data analytics from datareportal.com about the digital 2021 global overview. The digital 2021 global overview is a study that includes all of the evidence, patterns, and perspectives necessary to comprehend the global 'state of digital' in 2021. The report involves statistics about how the world's population uses the world wide web, mobile devices, and social networking sites. Finally, after gathering data, divide the research into two categories: students and college students. The conclusion presents that social media has an impact on sleep patterns.

3. Results and Discussion

As seen in [11], there are 4.20 billion social network consumers. This increased by 490 million in the last year, indicating a greater than year-over-year growth of more than 13%. People who use social media account for more than 53% of the global population. According to data, the total regular time spent on social media has increased by more than a half hour in the last five years. The average person currently consumes approximately two hours and twenty-five minutes daily on social media, equating to approximately one full working day a week. About social media users by age, it shows that mostly 18-24 years old, with a total of 25,2% of 4.20 billion users that can be related to college students. Students 13-17 years old, with a total of 6.7% of 4.20 billion users of social media

The data was chosen for journals or research data because it has problems, approaches, and sufficient information for data selection. Based on the results of a review of the 55 studies obtained, 41. Research shows a strong correlation between social media use and poor sleep, daytime sleepiness, insomnia, or disturbed sleep habits. The following results are obtained and divided into two categories. Research related to sample Students and College Students.

Table.1 Research related to the sample: Students

No	Year	Journal Title	Research Location	Population/Sample	Result
1	2015	Adolescent Problematic Social Networking and School Experiences: The Mediating Effects of Sleep Disruptions and Sleep Quality	Australia	A representative study of 1,886 students in Australia between the ages of 12 and 18 years old	Adolescents' inappropriate social networking usage greatly enhanced sleep disruptions, which had a detrimental effect on adolescents' expectations of sleep efficiency, lowering adolescents' ratings of school satisfaction.
2	2011	The effects of insomnia and internet addiction on depression in Hong Kong Chinese adolescents: an exploratory cross-sectional analysis	Hongkong, China	Secondary school in Hong Kong.	Results indicate that internet addicts were classified as insomniacs and depressive in this Chinese teenage study.
3	2017	Relationship between Mobile Phone Addiction and the Incidence of Poor and Short Sleep among Korean Adolescents: a Longitudinal Study of the Korean Children & Youth Panel Survey	Korea	Korean Adolescent	Results indicate that internet addicts were classified as insomniacs and depressive in this Chinese teenage study.
4	2019	Social media use and adolescent sleep patterns: cross-sectional findings from	UK	1. 872 teenagers (aged 13–15 years) were surveyed.	The findings suggest that social media usage and sleep behaviors, particularly late sleep beginning, are correlated with statistically

No	Year	Journal Title	Research Location	Population/Sample	Result
		the UK millennium cohort study			and functionally significant outcomes.
5	2018	The Relationship of Social Media Usage Duration and Sleep Pattern Disorders in Children Aged 12 to 14 Years at SMP Negeri 1 Langke Rembong	Indonesia	Adolescents aged 12-14 years in Langke Rembong Junior High School	In children aged 12-14 years at SMP 1 Langke Rembong, there is a correlation between the use of social media and interrupted sleeping habits.
6	2015	The Relationship Duration of Social Media Use with the Incidence of Insomnia in Adolescents in SMA Negeri 9 Manado	Indonesia	Adolescents in Manado 9 Junior High School	The period of social media usage and the prevalence of insomnia among adolescents in SMA Negeri 9 Manado are correlated. Suggestions help you spend less time on social media and better control your sleep time.
7	2020	Analysis of the Relationship between Social Media Use and Sleep Quality in Adolescents	Indonesia	Adolescents in Lawongan 1 Senior High School	In adolescents in class XI Mathematics and Natural Sciences (MIA) SMAN 1 Langowan, there is a connection between their usage of social media and their sleep quality
8	2017	The Relationship between Stress Level and the Incidence of Insomnia in Adolescent Social Media Users at MTS Muhammadiyah I Malang	Indonesia	Adolescents in Muhammadiyah Junior High School	There is a relationship between stress levels and the incidence of insomnia in adolescent social media users (Facebook).
9	2019	Prevalence and Effect of Social Media on Sleep among Students of Higher Institutions in Sokoto Metropolis, Sokoto State Nigeria	Nigeria	Students from Sokoto Metropolis, Sokoto State, Nigeria's higher education institutions	Students spend many hours a day on social media, affecting their sleep. There are growing facts. A regular sleep period of 7 to 9 hours is needed for the human body to act normally and healthily.
10	2017	Relationship Intensity Of Use Of The Site Social Networks With Insomnia On Teenagers At Muhammadiyah SMA 7 Yogyakarta	Indonesia	134 Senior High School Students	In adolescents at SMA Muhammadiyah 7 Yogyakarta, there is a connection between the frequency with which they use social networking sites and insomnia.
11	2020	Identifying drivers for bedtime social media use despite sleep costs: The adolescent perspective	UK	Adolescents between the ages of 11 and 17 years old engaged in focus group interviews	This research aims to include an adolescent viewpoint on the reasons for bedtime social media usage and the perceived effect on sleep.
12	2021	The Role of Technology and Social Media Use in Sleep-Onset Difficulties Among Italian	Italy	Three thousand one hundred seventy-two teenagers aged 11 to 15 years in Northern Italy.	This research informs a representative group of school-age children about the correlation between sleep

No	Year	Journal Title	Research Location	Population/Sample	Result
		Adolescents: Cross-sectional Study			problems, technology, and social networking. Screen-based exposure and online social networking are substantially correlated with teenage sleep-onset difficulties
13	2014	Effects of Pre-Sleep Media Use on Sleep/Wake Patterns and Daytime Functioning Among Adolescents: The Moderating Role of Parental Control	Belgium	1,926 Belgian students, Adolescents	According to correlational analyses, TV consumption, except television watching, was correlated to late bedtimes and greater sleep durations. Since social media usage may significantly impact adolescent sleep, parental supervision is needed to monitor adolescent media exposure and moderate the negative effects of social media use on sleep.
14	2019	Associations of Social Media Use With Physical Activity and Sleep Adequacy Among Adolescents: Cross-Sectional Survey	USA	Students of the eighth, tenth, and twelfth grades in the United States	Regularly using social networking daily was linked to continuing health behaviors, while mild social media usage was linked to the highest amounts of physical activity and the least amount of sleep adequacy for those with modest health behaviors.
15	2015	Technology Use and Sleep Quality in Preadolescence and Adolescence	Italy	A sample of 850 (364 males) preadolescents and adolescents	The circadian preference of the evening, cell phone and Internet usage, amount of other tasks after 21:00, late turn-off period, and number of devices in the bedroom have various detrimental effects on sleep quality in preadolescents and adolescents.
16	2017	Sleep in adolescents: association with social media, mental health, and problem behavior	Islandia	Study participants were primary school grades 8, 9, and 10 studied in Iceland's elementary schools	A chi-square correlation test and two-way ANOVA were performed to evaluate the hypothesis that time spent on social media affects sleep. Those who invested a long time on social media were more likely to sleep insufficiently (26.4%) than those who spent less time (9.7%).
17	2019	Media Use and Sleep in Teenagers: What Do We Know?	(American) USA	American teens	In conclusion, teens have high screen usage and bad sleep health (i.e., limited length, bad consistency, and late timing).
18	2015	The impact of Sleep Time-Related	(American) USA	American adolescents	STRICT usage was correlated with anxiety, excessive

No	Year	Journal Title	Research Location	Population/Sample	Result
		Information and Communication Technology (STRICT) on sleep patterns and daytime functioning in American adolescents			daytime sleepiness, excessive evening sleepiness, academic underperformance, later bedtimes, and decreased sleep length. Daytime sleepiness partly mediated the association between STRICT usage and underperformance.
19	2018	Fear of missing out and sleep: Cognitive behavioral factors in adolescents' nighttime social media use	UK	Adolescents between the ages of 12 and 18	Nighttime social media use was correlated with later bedtimes, greater cognitive arousal prior to sleep, a longer sleep onset delay, and a shorter sleep period.
20	2016	Tracking Effects of Problematic Social Networking on Adolescent Psychopathology: The Mediating Role of Sleep Disruptions	Australia	A total of 874 students from 27 different high schools were polled.	Adolescents who spent more time on social media had more depressed moods, with sleep disturbances accounting for about 53% of the correlation.
21	2020	Social Media Use, Social Media Stress, and Sleep: Examining Cross-Sectional and Longitudinal Relationships in Adolescents	Nether-lands	1,441 adolescents 11–15 years	SM usage was positively linked to sleep latency and daytime sleepiness. The empirical data revealed a positive correlation between SM tension and resulting sleep delay and daytime sleepiness, but only in females.
22	2015	Technology Use and Sleep Quality in Preadolescence and Adolescence	Italy	850 Italian preadolescents and adolescents	Adolescents showed increased sleep issues, a proclivity for evening sports, and a rise in Internet and mobile use and social media use. Poor sleep quality for adolescents was consistently correlated with smartphone use.

Table.2 Research related to the sample: College Students

No	Year	Journal Title	Research Location	Population/Sample	Result
1	2017	Impact of Social Media Usage on Daytime Sleepiness: A Study in a Sample of Tertiary Students in Singapore	Singapore	Tertiary Students in Singapore	The findings of this research pose health concerns around tertiary students' use of social media and daytime sleepiness.

No	Year	Journal Title	Research Location	Population/Sample	Result
2	2019	Prevalence and Effect of Social Media on Sleep among Students of Higher Institutions in Sokoto Metropolis, Sokoto State Nigeria	Nigeria	Students in Sokoto Metropolis, Sokoto State, Nigeria	The study found a substantial prevalence of social media use among students at higher education institutions in Sokoto, with a large proportion of them sleeping less. Schools and the general population should be conscious of the detrimental effects of students accessing social media late at night.
3	2020	Analysis of the Use of Social Media on the Incidence of Insomnia in Students	Indonesia	Students of UIN Sunan Ampel Surabaya with a total sample of 194 respondents	Social media usage and the occurrence of insomnia have a relatively poor connection. Social media use without good time management will change a person's sleep patterns, resulting in insomnia disorders.
4	2020	Relationship of Use of Social Media With Insomnia Events in Students: Literature Review	Indonesia	College student	There was a strong association between social media use and insomnia in 10 of the 11 studies.
5	2020	Long Relationships Using Social Media with Insomnia Events in Faculty of Health Science Students of Tuanku Tambusai University Of Heroes, 2020	Indonesia	Student of the Faculty of Health Sciences, Universitas Pahlawan Tuanku Tambusai	In 2020, there is a long-term correlation between social media usage and insomnia in students at Universitas Pahlawan Tuanku Tambusai's Faculty of Health Sciences.
6	2017	Relationship Between Internet Use and Sleep Pattern Disorders in PSIK Students UNITRI Malang	Indonesia	PSIK UNITRI Malang Student	It proves that 28 respondents experienced very heavy internet addiction, and 19 respondents experienced poor sleep patterns. Students at PSIK UNITRI Malang Have discovered a connection between internet usage and sleep disorders.
7	2021	The Relationship Between The Duration of Social Media Used With Quality of Sleep Aged 19-22 Years	Indonesia	Udayana University's Faculty of Social and Political Sciences has a Communication Studies Program	The more people spend on social media, the poorer their sleep quality.
8	2020	Relationships between the Severity of Internet Gaming Disorder, Severity of Problematic	USA	Hong Kong University students aged 18-24 in 2019	Internet games and social networking usage dominate many people's lives. However, prolonged participation in all

No	Year	Journal Title	Research Location	Population/Sample	Result
		Social Media Use, Sleep Quality, and Psychological Distress			of them may have detrimental health consequences.
9	2017	Social Media Use Before Bed and Sleep Disturbance Among Young Adults in the United States: A Nationally Representative Study	USA	A national survey of 1763 teens in the United States, ages 19 to 32, was taken	Sleep disruptions in young adults have been linked to social media usage. On the other hand, previous research has not clarified why using social media right before bedtime is so essential.
10	2020	Determinants of Subjective Poor Sleep Quality in Social Media Users Among Freshman College Students	Saudia Arab	First-year college students became users	Social media usage has increased among teens. This is correlated to poor sleep quality, a hazard factor for mental and physical health problems.
11	2015	Relationship Time Range of Social Media Use with the Incidence of Insomnia in Students of the Faculty of Computer Science, University of Lancang Kuning	Indonesia	Student of the Faculty of Computer Science, University of Lancang Kuning	In students at the university of Lancang Kuning's Faculty of Computer Science, there is a connection between the frequency with which they use social media and the occurrence of insomnia.
12	2018	Prevalence of Insomnia and Its Association with Social Media Usage among University Students in Selangor, Malaysia, 2018	Malaysia	445 students from private universities in Shah Alam	The moment they had the most links on social media was between 20.00 and 12.00 when 66.7 percent of them did so. While the least access time is in the morning between 08.00-12.00 for 24% of respondents. The prevalence of insomnia among respondents was 69%.
13	2016	Influence of WeChat on sleep quality among undergraduates in Chongqing, China: a cross-sectional study Xianglong Xu, Qianyi Lin, Yan Zhang	China	Undergraduates in Chongqing, China	535 (27.0%) males and 1311 (66.3%) females for those aged 20.27 ± 1.26 years recorded low sleep quality.

No	Year	Journal Title	Research Location	Population/Sample	Result
14	2020	Social Media Addiction and Sleep Problem: A Structural Equation Modelling	Romania	University to all the dentistry 1st- 4th form students Faculty of Dentistry, Cyprus Health and Social Sciences University, Güzelyurt, Cyprus	Regular Instagram users have mentioned sleep issues. WhatsApp was social media's second most powerful impact on students' sleep. WhatsApp Users who use the app often say they have trouble waking up and sleeping.
15	2014	Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students	Turkey	Suleyman Demirel University's students	According to findings, mobile overuse can be linked to depression, anxiety, and bad sleep quality. Overusing these substances may contribute to stress or anxiety, which can add to sleep issues. Smartphone addiction should be closely tracked among university students with high depression and anxiety scores.
16	2020	Prediction Of Intention To Change Sleep Behavior Among Undergraduates: Social Media And Perception Of Quality Of Sleep	Thailand	A sample of 400 undergraduate students using social media	The study's findings suggest that if students are to improve their sleep habits, they need to be educated about the advantages of sleep and the risk of sleep disorders, as well as guidelines for how much social media they can use each day.
17	2020	Relationship between Social Media Use and Sleep Quality of Undergraduate Nursing Students at a Southeastern University	USA	A total of 133 undergraduate nursing students from Southeastern University were included in this study's survey	According to studies, 60% of college students had low sleep efficiency, sleeping an average of 6-6.9 hours a night. People between 18 and 25 use social media at significant rates. Numerous research has shown that social media affects sleep efficiency.

Of the 41, it was categorized into a sample of students and undergraduates. So the sample of students obtained 22 studies, while the sample of students obtained 19 studies. This is accomplished by analyzing the conclusions of each paper in order to see in detail the impact of social media use on their sleeping pattern.

For students from 22 studies, it was found that social media influenced their sleep patterns and resulted in insomnia. According to a study on the effect of Sleep Time-Related Information and Communication Technology (STRICT) on sleep habits and daytime functioning in American adolescents, 56.7% of Insomnia, daytime sleepiness, nighttime sleepiness, academic outperformance, delayed bedtimes, and sleep quality length were all observed in the study as they texted/tweeted/messaged in bed [13]. According to one study in Chinese, the influence of social media after sleep disturbance, namely insomnia, also induces depression [14]. These findings suggest that complex pathways can occur between insomnia, internet addiction, and depression.

For the college students category, 19 studies show that it is true that the use of social media has an impact on sleep disturbances, insomnia, and sleep patterns every day. Four of the studies stated that social media impacts sleeping patterns and is directly related to depression, anxiety, and stress levels. Research conducted at Students in Suleyman Demirel University states that the study suggests that smartphone overuse, especially social media, could be related to mental, anxiety, and sleep quality. Excessive usage can lead to stress or anxiety, leading to sleep issues [15]. The following is a case description of the impact of social media on sleep patterns in various countries according to the 41 journals above, which are grouped by country. The diagram shows that there were 10 cases of the effects of social media on sleep patterns in Indonesia. Then 7 cases were found in the USA, and 3 in the UK, Nigeria, and Italy. Social media impact as show in Fig. 2.

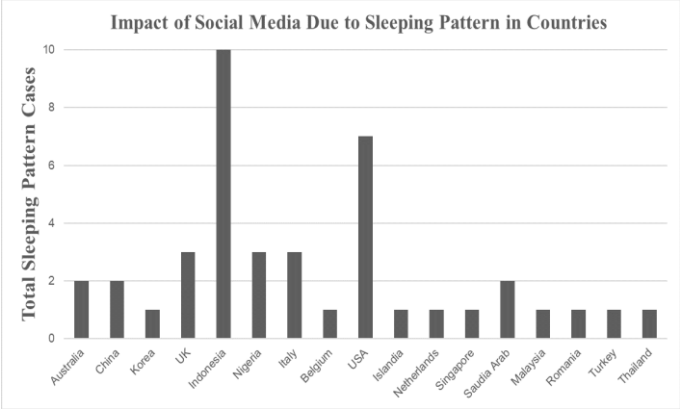

Fig. 2. Social Media Impact on Sleeping Patterns in every country

Another research found several points about the effects of heavy social media use by college students. For example, of college students at Prince Sattam bin Abdul Aziz University, only 1% used social media for academic purposes, while 57% were addicted to social media [16]. Nighttime television and social media usage were positively associated with weight and weight status among different first-semester college students in America [17]. The impact of college student bedtime and increased mobile phone usage was substantially decreased with academic achievement and sleep quality [18]. It is essential to understand how much time college students invest in social networking platforms and the activities they participate. The concern is not social media; it is the actual usage and purpose of social media practices that make the difference impact [19].

Several journals above state that the use of social media for students, especially adolescents, must be accompanied by guidance from parents. Because most social media sites are owned by profit corporations that often advertise and collect data [20], advertisers such as pornographic material, alcohol, and a variety of other unhealthy items may easily reach adolescents through these social media platforms [21]. So parents need to ask their children about their social media usage and become better educated about the various technologies their children use

4. Conclusion

The literature review shows a relationship and impact between social media use and sleep patterns, including insomnia, sleep disturbances, and daytime sleepiness. This is also supported by data from the digital 2021 global overview, which shows that 31.9% of social media users are aged 13-24 and can have the status of students and college students. On average, accessing social media daily is 2 hours and 25 minutes a day, with the platforms most frequently accessed being Facebook, Whatsapp,

Instagram, and Tiktok. From 55 studies obtained, 41 studies show that this is due to frequent access to social media before bedtime, both students and college students. Insomnia, where the longer a person accesses social media, the person's sleep time will also experience disturbances, resulting in insomnia. Several journals also state a correlation between social media use and the incidence of insomnia. Even from 4 studies, The conclusion is that there is a connection between social media usage and insomnia results in anxiety and depression. Some of these studies also stated that a relationship related to sleep patterns with social media resulted in academic performance. The everyday usage of social media and the activity of bringing a mobile or other devices to bed and the longer the use of social media through these gadgets will further disturb the regulation of the hormone melatonin so that it can cause insomnia which causes disturbed sleep patterns.

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