

## The Association Between Social Media Use Intensity and Sleep Quality Among University Students at Universitas Graha Edukasi Makassar

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### ARTICLE INFO

#### Article history :

Received 2025-July-18

Received in revised form 2025-July-23

Accepted 2025-July-23

#### Keywords :

Social Media Usage Intensity

Sleep Quality

University Students

Digital Technology

PSQI (Pittsburgh Sleep Quality Index)

#### Kata Kunci :

Intensitas Penggunaan Media Sosial

Kualitas Tidur

Mahasiswa

Teknologi Digital

PSQI

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### ABSTRAK

**Latar Belakang:** Perkembangan teknologi digital dan meningkatnya akses internet menyebabkan penggunaan media sosial di kalangan mahasiswa semakin tinggi. Intensitas penggunaan media sosial yang berlebihan, terutama pada malam hari, dapat memengaruhi pola dan kualitas tidur. Kurangnya durasi dan kualitas tidur berpotensi menimbulkan dampak negatif terhadap konsentrasi, prestasi akademik, serta kesehatan fisik dan mental mahasiswa.

**Tujuan:** untuk mengetahui hubungan antara intensitas penggunaan media sosial dengan kualitas tidur pada mahasiswa Universitas Graha Edukasi Makassar.

**Metode:** Penelitian ini menggunakan desain kuantitatif dengan pendekatan cross-sectional. Sampel penelitian adalah mahasiswa aktif yang dipilih menggunakan teknik purposive sampling. Data dikumpulkan melalui kuesioner intensitas penggunaan media sosial dan instrumen Pittsburgh Sleep Quality Index (PSQI) untuk mengukur kualitas tidur responden. Analisis data dilakukan secara univariat dan bivariat menggunakan uji chi-square dengan tingkat signifikansi 0,05.

**Hasil :** Sebagian besar responden memiliki intensitas penggunaan media sosial dalam kategori tinggi, serta kualitas tidur dalam kategori kurang baik. Analisis bivariat menunjukkan adanya hubungan yang signifikan antara intensitas penggunaan media sosial dengan kualitas tidur mahasiswa ( $p < 0,05$ ). Mahasiswa dengan intensitas penggunaan media sosial yang tinggi cenderung memiliki kualitas tidur yang lebih buruk dibandingkan dengan mahasiswa yang menggunakan media sosial dalam kategori rendah hingga sedang.

### ABSTRACT

**Background:** The development of digital technology and increased internet access have led to a significant rise in social media use among university students. Excessive intensity of social media use, especially at night, can affect sleep patterns and sleep quality. Insufficient sleep duration and poor sleep quality may have negative impacts on concentration, academic achievement, as well as students' physical and mental health.

**Objective:** To determine the relationship between the intensity of social media use and sleep quality among students at Universitas Graha Edukasi Makassar.

**Methods:** This study employed a quantitative design with a cross-sectional approach. The research sample consisted of active students selected using purposive sampling techniques. Data were collected through a social media usage intensity questionnaire and the Pittsburgh Sleep Quality Index (PSQI) instrument to measure respondents' sleep quality. Data analysis was conducted using univariate and bivariate methods with the chi-square test at a significance level of 0.05.

**Results:** Most respondents had a high intensity of social media use and poor sleep quality. Bivariate analysis showed a significant relationship between the intensity of social media use and students' sleep quality ( $p < 0.05$ ). Students with high social media usage intensity tended to have poorer sleep quality compared to those with low to moderate levels of social media use.

## INTRODUCTION

Social media is a facility provided for consumers to share information through text, video, images, and audio between one person and another (Julia, 2020). The use of social media to the point of addiction is caused by the need to access social media, which reduces sleep time and can result in insomnia (Sastrawan, 2017).

According to the World Health Organization (WHO), global social media usage has reportedly reached 4.2 billion, an increase of 13%, with 490 million new users in 12 months. On average, this equates to more than 1.3 million new social media users per day (Leberly & Dicky, 2021). Based on the 2021 National Sleep Foundation data in Southeast Asia, social media usage reaches 2,595,435 people annually. Considering the population in the region, the social media usage rate is 67%, significantly higher than the population in European and African countries, which is around 23% (Fitri & Amalia, 2021).

In Indonesia, social media usage ranks fifth, covering 54.68% of 143.26 million people, equivalent to 262 million individuals. In 2023, out of 5.19 billion social media users globally, 94% of them were internet users. In Indonesia itself, in 2023, the number of internet users increased to 215.62 million, or 78.19% of the total population. From this number, social media users accounted for 83.25% of total internet users (APJII, 2022).

Based on data from South Sulawesi Province in 2021, 59.69% of the population aged 5 years and older used the internet (including Facebook, Twitter, WhatsApp), with a higher percentage of male users than female. Social media usage locations included school or campus buildings, with most activity in campuses at 9.59%, and in public places for free use at 14.57% (Putri, 2017).

A survey by Kominfo (2019) reported that in Makassar City, social media usage reached 72% of the total population, spanning nearly all age groups. Social media can serve as a medium to increase knowledge and complete school or campus assignments. Based on data from the Health Sciences College, now Universitas Graha Edukasi Makassar, the 2022 cohort had 360 students, the 2023 cohort had 43 students, and the 2024 cohort had 36 students.

Research by Baiq L. (2021) found that the intensity of social media use has a significant relationship with the sleep quality of students. The study concluded that the longer the duration of social media use, the poorer the quality of sleep, especially in the 19–22 age group. Meanwhile, Renaldo (2020), through an analytic study with a cross-sectional design conducted at Universitas Pahlawan Tuanku Tambusai from June 15–22, 2020, involving a population of 1,262 students from the Faculty of Health Sciences using a random sampling technique, showed that the duration of social media use was associated with the incidence of insomnia among students of the Faculty of Health Sciences at Universitas Pahlawan Tuanku Tambusai in 2020.

## METHODS

This study employed an analytical correlational design with a cross-sectional approach, aimed at examining the relationship between the intensity of social media use and sleep quality among students at Universitas Graha Edukasi Makassar. The study population consisted of all students from the 2022–2024 cohorts, totaling 439 students. The sample was selected using a non-probability sampling technique with consecutive sampling, meaning all students who met the inclusion criteria were included until the required sample size was reached. Based on Slovin's formula, the final sample consisted of 37 students, with a 5% margin of error and 10% allowance.

Inclusion criteria were students of Universitas Graha Edukasi Makassar who were willing to participate and owned a mobile phone to access social media. Exclusion criteria included students who did not use social media or did not complete the questionnaire.

Data were collected using Google Forms questionnaires distributed via WhatsApp. The intensity of social media use was measured using the Social Media Use Integration Scale (SMUIS), which consists of 12 items on a 4-point Likert scale and categorized as low, moderate, or high. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), which includes 19 questions across 7 components, yielding scores from 0 to 21; scores  $\leq 5$  indicate good sleep quality, while scores  $> 5$  indicate poor sleep quality.

Before analysis, the data underwent editing, coding, entry, tabulating, and cleaning to ensure accuracy and completeness. Univariate analysis was conducted to examine the frequency distribution of each variable, and bivariate analysis was performed to determine the relationship between social media use intensity and sleep quality using SPSS, with normality testing as an assumption check.

Ethical considerations were observed by obtaining informed consent, maintaining anonymity, and ensuring confidentiality. Participants were fully informed about the study's purpose and had the right to decline participation without any consequences.

## RESULTS

### 1. Characteristics of Respondents

Table 1. Frequency Distribution of Respondents' Demographic Characteristics Students of Universitas Graha Edukasi Makassar ( $n = 37$ )

Characteristic	Frequency (n)	Percentage (%)
<b>Gender</b>		
Male	11	29,7
Female	26	70,3
<b>Age</b>		
20 years	3	8,1
21 years	13	35,1
22 years	10	27,0
23 years	2	5,4
24 years	9	24,3
<b>Semester</b>		
2	3	8,1
3	4	10,9
5	6	16,2
6	8	21,6
7	16	43,2

From Table 1, it is shown that the majority of respondents were female (70.3%), indicating higher participation of female students. The most frequent age was 21 years (35.1%), followed by 22 years (27.0%). Regarding semester distribution, the largest group was in the 7th semester (43.2%), suggesting that most respondents were upper-year students. These characteristics provide context for interpreting social media use and sleep quality patterns.

### 2. Social Media use Intensity

Table 2. Frequency Distribution of Social Media Use Intensity Students of Universitas Graha Edukasi Makassar ( $n = 37$ )

Category	Frequency (f)	Percentage (%)
<b>Device used to access social media</b>		
Smartphone / Tablet	35	94.6
Laptop	2	5.4
<b>Most frequently used social media daily</b>		
WhatsApp / Instagram	31	83.8
Facebook / TikTok	6	16.2
<b>Daily access frequency</b>		
>4–5 times / 6 times	20	54.1
1–3 times	17	45.9
<b>Feeling disturbed when unable to log in</b>		
Agree / Strongly Agree	30	81.1
Disagree / Strongly Disagree	7	18.9
<b>Social media's importance in social relationships</b>		

Agree / Strongly Agree	34	91.9
Disagree / Strongly Disagree	3	8.1

The data indicate that almost all respondents (94.6%) accessed social media primarily via smartphones or tablets. WhatsApp and Instagram were the dominant platforms (83.8%), suggesting preference for messaging and visual content applications. More than half of respondents (54.1%) accessed social media more than 4–5 times per day, indicating high daily usage. Most respondents (81.1%) reported feeling disturbed if unable to log in, reflecting dependency, and 91.9% considered social media important for maintaining social relationships. Overall, these findings show moderate to high intensity of social media use among the participants.

### 3. Sleep Quality

Table 3. Frequency Distribution of Sleep Quality Students of Universitas Graha Edukasi Makassar ( $n = 37$ )

Category	Frequency (f)	Percentage (%)
<b>Usual bedtime</b>		
21:30–22:00 WITA	22	59.5
23:00–00:00 WITA	15	40.5
<b>Self-rated sleep quality</b>		
Good / Very Good	24	64.9
Poor / Very Poor	13	35.1
<b>Time to fall asleep</b>		
5–10 min	21	56.8
30–60 min	16	43.2
<b>Night-time discomfort (cramps, pain)</b>		
Never / <1x per week	22	59.5
1–3x per week	15	40.5
<b>Sleep duration per night</b>		
1–5 hours	31	83.8
6–9 hours	6	16.2

Most students (59.5%) reported going to bed between 21:30 and 22:00, and a majority (64.9%) rated their sleep quality as good. However, a substantial proportion (35.1%) reported poor sleep quality, and 43.2% needed 30–60 minutes to fall asleep. Notably, 83.8% of respondents slept only 1–5 hours per night, which is below the recommended sleep duration for adults, suggesting potential sleep deprivation. Night-time discomfort occurred in 40.5% of respondents at least 1–3 times per week, indicating that physical factors may also affect sleep quality.

### 4. Relationship Between Social Media Use Intensity and Sleep Quality

Table 4. Chi-Square Test of Relationship Between Social Media Use Intensity and Sleep Quality Students of Universitas Graha Edukasi Makassar

Social Media Use Intensity	Sleep Quality				Total	Percentage	<i>p-value</i>
	Good		Poor				
	n	%	n	%			
Low	19	51,4	0	0,0	19	51,4	0,000
Moderate	0	0,0	18	48,6	18	48,6	
<b>Total</b>	<b>19</b>	<b>51,4</b>	<b>18</b>	<b>48,6</b>	<b>37</b>	<b>100</b>	

Based on the analysis presented in Table 5.4, out of a total of 37 respondents (100%), a pattern was observed between the intensity of social media use and the sleep quality of students at Universitas Graha Edukasi Makassar. High intensity of social media use was associated with poor sleep quality, while low intensity was reported by 19 respondents (48.6%) and moderate intensity by 18 respondents (51.4%). The Chi-Square statistical test yielded a *p*-value of 0.000, indicating a significant relationship between social media usage intensity and students' sleep quality.

## DISCUSSION

### A. Intensity of Social Media Use

In this study, social media use intensity was categorized into three levels: low, moderate, and high. Based on the research conducted on students at Universitas Graha Edukasi Makassar, most students reported a moderate level of social media use. Among the 37 respondents, 18 students (48.6%) had low social media use intensity, and 19 respondents (51.4%) had moderate social media use intensity.

These findings are consistent with a study by Arita Murwani (2021), which involved 19 respondents, showing that most had a moderate level of social media use: 18 respondents (48.6%) at moderate intensity and 19 respondents (51.4%) at low intensity. This indicates that the majority of respondents use social media at a moderate to high intensity.

Some indicators used to measure social media use intensity include duration and frequency of use. Duration refers to the length of time a person spends engaged in activities, while frequency refers to how often someone performs these activities within a certain period (Mahalingham et al., 2022). In this study, most respondents accessed social media via smartphones (35 respondents, 94.6%), while 2 respondents (5.4%) used computers or laptops. Among respondents with high usage intensity, 31 respondents (83.8%) accessed social media for more than five hours per day, and 17 respondents (45.9%) accessed social media more than six times per day.

Regarding demographics, the majority of respondents were female (26 respondents, 70.3%) and aged 21 years (13 respondents, 35.1%). The results suggest that high social media use occurs among young adults. With technological development, social media has become an essential part of adolescent life, serving as a means for communication (messaging, email), information sharing, entertainment, and alleviating boredom amid academic workload. Social media is also used for posting statuses, photos, and videos (Wong & McLellan, 2023).

### B. Sleep Quality

The study results showed that among 37 respondents, 19 students (51.4%) had good sleep quality, while 18 students (48.6%) had poor sleep quality. Social media use intensity strongly affects students' sleep quality at Universitas Graha Edukasi Makassar. Poor sleep can lead to health issues, including nervous system disorders. Sleep helps restore normal sensitivity and balance within neural systems and supports bodily functions by refreshing organs and reducing activity during rest (Alimun, 2019).

These findings align with Marliani (2020), who reported that among 18 respondents, 48% experienced poor sleep quality, while 51% had good sleep quality. Poor sleep can negatively affect psychological health, reducing motivation for daily activities and overall quality of life. Mismanagement of social media use both at campus and home can disrupt sleep patterns, preventing adolescents from achieving the ideal 8–10 hours of nightly sleep. Consequently, high or excessive social media use leads to decreased sleep quality (Athiutama et al., 2023).

Among respondents, 15 students (40.5%) went to bed between 21:30–22:00, and 24 students (64.9%) reported poor sleep over the past month, mostly due to excessive social media use at night, which delayed sleep onset. Regarding age, most respondents were 21 years old (13 respondents, 35.1%), considered late adolescents. First-year students typically range from 17–19 years old and are among the highest social media users (Sarwano, 2018). Students often access social media throughout the day, in the morning, during free time, and at night, leading to difficulties falling asleep, restless sleep, night awakenings, and morning drowsiness, which impacts academic performance (Kirin et al., 2023).

Regarding gender, females dominated the sample (26 respondents, 70.3%). Females tend to be more active on social media than males, often due to a desire for social attention, which manifests as frequent status or photo updates (Muhammad, 2019). Excessive social media use can reduce rest time, leading to poor sleep quality (Gundogmus et al., 2019).

### C. Relationship Between Social Media Use Intensity and Sleep Quality

A Chi-Square test using SPSS 26 for Windows produced a  $p$ -value  $< 0.000$ , indicating a significant relationship between social media use intensity and sleep quality among students at Universitas Graha Edukasi

Makassar. The test showed that higher social media use intensity correlates with poorer sleep quality. In other words, the more intensely students use social media, the worse their sleep quality.

Excessive and compulsive social media use can disrupt social interactions, as students may prefer online interaction over face-to-face communication, which is perceived as safer and more convenient. Easy access via smartphones often leads to late-night usage, compromising sleep quality. Intense daily use can affect melatonin production, disrupting sleep regulation (Pantic, 2012).

These results align with Wahyuni & Susanti (2021), who found that 19 respondents (51.4%) with low internet use had poor sleep, while 18 respondents (48.6%) had good sleep. Spearman Rho analysis by Agus (2019) of 86 respondents showed that among high-intensity users, 6 respondents (10.2%) had good sleep, and 53 respondents (89.8%) had poor sleep, with  $r = -0.736$  (strong negative correlation,  $p = 0.001 < 0.05$ ).

Fathun (2020) reported that 100% of 209 adolescents actively used social media, and 85.6% delayed sleep due to its use. Similarly, Risna (2020) found that among students with high smartphone use, 68.2% experienced poor sleep, while those with moderate or low use had better sleep quality. Physiologically, blue light exposure from screens suppresses melatonin, prolonging sleep latency. Psychologically, excessive social media use induces curiosity, FOMO (fear of missing out), and cognitive stimulation, keeping the brain active and delaying sleep onset. This habit can reduce concentration, memory, academic performance, and overall health. These findings highlight the vulnerability of students to sleep disturbances due to high social media exposure, underscoring the need for digital time management, digital detox, and healthy sleep habits (Khan, 2020).

## CONCLUSION

This study concludes that there is a significant relationship between the intensity of social media use and sleep quality among students of Universitas Graha Edukasi Makassar. Most students demonstrated moderate to high levels of social media use, with smartphones being the primary access device. The statistical analysis using the Chi-Square test showed a  $p$ -value  $< 0.05$  ( $p = 0.000$ ), indicating a significant association between the two variables. Higher intensity of social media use was associated with poorer sleep quality. Excessive and prolonged exposure to social media, particularly at night, may delay sleep onset, reduce sleep duration, and negatively affect overall sleep quality. These findings highlight the importance of proper time management, digital use awareness, and healthy sleep habits among university students to prevent sleep disturbances and maintain optimal health and academic performance.

## LIMITATIONS AND RECOMMENDATION

This study has some limitations, including a small sample size of 37 students from Universitas Graha Edukasi Makassar, reliance on self-reported data, and a cross-sectional design that prevents causal inferences. Other factors affecting sleep quality, such as stress, lifestyle, and environmental conditions, were not considered. Despite these limitations, the findings suggest that students should manage their time and limit excessive social media use, especially before bedtime, to improve sleep quality. Educational institutions are encouraged to provide awareness programs on healthy digital habits. Future research should include larger, more diverse populations, employ longitudinal designs, and examine additional factors influencing sleep to better understand the relationship between social media use and sleep quality.

## REFERENCES

- Asosiasi Penyelenggara Jasa Internet Indonesia (APJII). (2022). APJII: Penggunaan internet Indonesia 215,63 juta pada tahun 2022–2023.
- Asosiasi Penyelenggara Jasa Internet Indonesia (APJII). (2023). Survei penetrasi & perilaku internet 2023.
- Athiutama, A., Ridwan, R., Febriani, I., Erman, I., & Trulianty, A. (2023). Penggunaan media sosial dan kualitas tidur pada remaja. *Jurnal Keperawatan Rafflesia*. <https://doi.org/10.33088/jkr.v5i1.867>
- Badan Pusat Statistik Indonesia (BPS). (2021). Proporsi individu yang menggunakan internet menurut provinsi 2017–2019. Jakarta: BPS, Survei Sosial Ekonomi Nasional (SUSENAS).

- Baiq, A. (2021). Hubungan lama durasi penggunaan media sosial dengan kualitas tidur pada usia 19–22 tahun. *Original Article*, 9(1). Universitas Udayana, Denpasar, Bali.
- Carlos, N. R. (2015). *Fisiologi perilaku* (11th ed., Vol. 1, diterjemahkan oleh Damaring Tyas Wulandari). Jakarta: Erlangga.
- Dahlan, S. M. (2013). *Besar sampel dan cara pengambilan sampel*. Jakarta: Salemba Medika.
- Effendi, L. N., & Tamara, M. D. (2022). Kajian naratif: Hubungan durasi media sosial dengan kejadian insomnia pada remaja. *Sehat Masada: Jurnal Penelitian Kesehatan*. <https://doi.org/10.38037/jsm.v16i2.367>
- Gündoğmuş, İ., Taşdelen Kul, A., & Çoban, D. A. (2019). Investigation of the relationship between social network usage and sleep quality among university students. *Anatolian Journal of Psychiatry*. <https://doi.org/10.5455/APD.55929>
- Khan, A. A., Sajjad, M. A., & Iqbal, A. (2022). Impact of social media addiction on quality of sleep among university students: Gender and socio-economic status in focus. <https://doi.org/10.71016/oms/x1btt445>
- Kirin, A., Muhammed, N. K. W., Hamidi, A., & Putra, M. D. (2023). Pengaruh media sosial terhadap insomnia dalam kalangan pelajar UTHM Pagoh. *Deleted Journal*. <https://doi.org/10.17576/ebangi.2023.2003.10>
- Liberty, J., & Dicky, P. (2021). Selama 2020, jumlah pengguna media sosial di dunia tembus 4,2 miliar.
- Mental Health Foundation. (2015). *Sleep matters: The impact of sleep on health and wellbeing*. London, UK: Mental Health Awareness Week 2011. Retrieved March 29, 2020, from <https://www.mentalhealth.org.uk/sites/default/files/mhf-sleep-report-2011.pdf>
- Nafiah, N., & Kustiningsih. (2018). Hubungan durasi penggunaan media sosial dengan kualitas tidur pada remaja kelas VIII di SMP Muhammadiyah 1 Yogyakarta. *Jurnal Keperawatan*, Universitas Aisyiyah Yogyakarta.
- Nasrullah, R. (2015). *Media sosial: Perspektif dan sosioteknologi komunikasi, budaya*. Bandung: Simbiosis Rekatama Media.
- National Institutes of Health (NIH). (2015). *NIH Sleep Research Plan*. The National Center on Sleep Disorders Research (NCSDR), National Heart, Lung, and Blood Institute (NHLBI).
- Nursala, A., Susila, & Lestari, P. P. (2015). *Metodologi penelitian ilmu keperawatan: Pendekatan praktis* (4th ed.). Jakarta: Salemba Medika.
- Patrick, R. (2012). Beta-blocker drugs and sleep disturbances. *American Journal of Sleep Technologists*.
- Punkasaningtiyas, R. (2028). Hubungan penggunaan media sosial dengan kualitas tidur, kestabilan emosi dan kecemasan sosial pada remaja di SMA 20 Surabaya. Skripsi, Universitas Airlangga.
- Putra, D., & Marhaeni, A. (2015). Hubungan kebutuhan afiliasi dengan intensitas penggunaan jejaring sosial Twitter pada remaja akhir. *Jurnal Psikologi Udayana*, 2(1), 48–58.
- Renaldo, F., & Ridha, H. (2020). Hubungan lama penggunaan media sosial dengan kejadian insomnia pada mahasiswa Fakultas Ilmu Kesehatan Universitas Pahlawan Tuanku Tambusai Tahun 2020. *Jurnal Ners*, 4(2), 83–89.
- Ricard, G., & Smith, A. P. (2016). A review of energy drinks and mental health, with a focus on stress, anxiety, and depression. *Journal of Caffeine Research*.
- Schuup, M., & Hanning, C. D. (2003). Physiology of sleep. *British Journal of Anaesthesia, CEPD Review*, 3(3), 69–74. Retrieved April 2, 2020, from <https://oup.silverchaircdn.com>
- Sedock, B. J. (2010). *Buku ajar psikiatri klinis* (2nd ed., diterjemahkan oleh Profitasari, M. T.). Jakarta: EGC.
- Siallagan, A., Ginting, A., & Margaret, T. (2023). Hubungan penggunaan media sosial dengan kualitas tidur pada remaja di SMK Negeri 2 Tahun 2022. *Innovative: Journal of Social Science Research*, 3(4), 4912–4924.
- Supranto, J., & Limakrisna, N. (2016). *Petunjuk praktis penelitian ilmiah untuk menyusun skripsi, tesis, dan disertasi* (4th ed.). Jakarta: Mitra Wacana Media.
- Swarjana, I. K. (2015). *Metodologi penelitian kesehatan* (Revised ed.). Yogyakarta: Andi Offset.
- Swarjana, I. K. (2016). *Statistik kesehatan*. Yogyakarta: Andi Offset.
- Syamsuudin, W., & Wowiling, F. (2015). Hubungan durasi penggunaan media sosial dengan kejadian insomnia pada remaja di SMA Negeri 9 Manado. *Jurnal Keperawatan UNSRAT*, 3(1), 113–617.
- Szabadi, E. (2015). Neural networks regulating sleep and arousal: Effect of drug, drug treatment of sleep disorders. In A. Gugliete (Ed.), *Springer International Publishing Switzerland*. Retrieved April 1, 2020, from [www.springer.com](http://www.springer.com)

Ventola, C. L. (2014). Social media and health care professionals: Benefits, risks, and best practices. *P&T Journal*, 39(7).

Wong, S. L., & McLellan, R. (2023). Adolescents' motivation to use social network sites from a psychological needs perspective. *Journal of Adolescence*. <https://doi.org/10.1002/jad.12276>

