



Correlation between Duration of Social Media Use and Sleep Pattern Disorders In Children Aged 10-12 Years at SD Negeri Kepatihan 05 Jember

Roza Riska Romadhoni¹, Zuhrotul Eka Yulis Anggraini¹, Trias Maharani², Nikmatur Rohmah^{2*}, Eileen Savage³

¹Nursing Program Study, Faculty of Health Science, University Muhammadiyah Jember, Indonesia

²Pediatric Nursing Department, Faculty of Health Science, University Muhammadiyah Jember, Indonesia

³University of College Cork, Ireland

Correspondent Author:

Nikmatur Rohmah

Email:

nikmaturrohmah@unmuhjember.ac.id

Keywords:

Children, Sleep Pattern Disorders, Social Media Use.

Abstract

Social media usage can both positively and negatively affect children's sleep patterns, with potential negative effects on the quality and quantity of sleep. However, until now, more evidence is needed about the phenomenon in a population of school-age children. This study aims to analyze the relationship between the duration of social media use and sleep pattern disturbances in children aged 10-12 years at SD Negeri Kepatihan 05 based on the theory of problematic smartphone use. The research design uses a correlational approach with a cross-sectional approach. The population of children aged 10-12 years at SD Negeri Kepatihan 05 Jember is 250 respondents. The number of samples was 104 using simple random sampling. Data collection on the duration of social media use used an observation sheet while sleep pattern disturbances used a questionnaire sheet. Data analysis used rho sperm with the condition $\alpha \leq 0.05$. The results showed that there was a relationship between the duration of social media use and disturbed sleep patterns in children aged 10-12 years. The correlation in this study shows an r-value of 0.230 which identifies the degree of weak relationship, p-value of 0.019. The duration of social media use has been found to have a positive relationship with disturbed sleep patterns. This study concluded that prolonged social media use can disrupt sleep patterns in children, emphasizing the need for parental monitoring in this context.

INTRODUCTION

Social media is proof of technological progress in this modern era, this has made people addicted to using it. Wise and effective users of social media can have a positive impact. The positive impact of using social media is that it can increase knowledge, facilitate communication, and train creativity in children (Fatriansari *et al.*, 2021). The use of social media has an impact on the growth of children, especially school-age children because their mentality still tends to be unstable while the information obtained is faster. Children are also more often selfish, they may not be aware of their environment (Rodli *et al.*, 2022). The ideal time to use social media for children is for children aged 3-5 years, it is determined 1 hour per day, while at the age of 6-12 years, it is determined 2 hours per day (Witantri *et al.*, 2022).

School-aged children use social media 80% for entertainment. The average time spent using social media in Indonesia is six hours a day and 76.67% of Indonesians access the internet 3 times in 1 hour per day (Hepilita *et al.*, 2018). Several provinces contribute the most to social media usage. Social media is ranked first on Java Island with an incidence of 55.7%, then Sumatra is ranked 2nd with 21.6%, as a contributor to the use of social media ranked 3rd with cases of 10.9%, namely Sulawesi-Maluku-Papua (Masril *et al.*, 2020). West Java has the highest social media usage in Java Island at 73.7%. Bandung is the capital city with the highest

use of social media at 74.5% compared to other capital cities in West Java (Purboningsih *et al.*, 2023).

The effect of social media on children is the disruption of their sleep patterns. Indonesia shows that 62.5% of children suffer from sleep pattern disturbances and the most severe types of sleep disturbances. Semarang shows a figure of 48% of children with disrupted sleep patterns with the type of child waking up too late, 85% of children getting enough sleep, 12.2% of children sometimes peeing at night, and 70% of children sometimes lazy to get up (Wahyuningrum, 2021). This aims to determine the sleep patterns of school-age children which include sleep activity, types of sleep disturbances, factors that affect sleep, and sleep disturbance tools. A disorder of initiating and maintaining sleep can be called a disturbance and initiating and maintaining sleep. In school-aged children, 61.5% of children had this disorder (Isnaningsih *et al.*, 2022).

Many things can affect the duration of using social media for quite a long time, from a health perspective the use of social media has a major influence on health, namely impaired visual acuity, amblyopia, disturbed sleep patterns, reduced appetite, and mental health disorders. Among the several causes of health problems in the use of social media, sleep pattern disturbances (Nila *et al.*, 2020). Disruption of sleep patterns is a decrease in the need for sleep in quality and quantity. Sleep disturbances can be caused by many factors. The seriousness of sleep pattern disturbances is not widely known by the general public because they consider it harmless, in this case, if it is not handled properly it will endanger health. It is necessary to know the importance of maintaining sleep to create good sleep (Radityo, 2020).

The public is advised to pay attention to the strategy of body recovery, namely efforts to speed up the recovery process in the body so that they can compensate for physical and psychological stress fatigue. Physical activity and sleep quality have a positive relationship because the better the quality of sleep, the better the level of physical activity. Someone who has good quality sleep can do activities to the fullest. Applying a good sleep pattern can expedite cell generation and can boost immunity. The use of social media greatly affects the quality of sleep in children. Peer influence and parental monitoring greatly influence the length of social media use in children. The quality of sleep in children is related to the interaction between parents and children. Parental involvement is needed to monitor how long children use social media. With this, the duration of sleep in children will be monitored properly. Efforts to reduce the impact of disrupted sleep patterns are by educating children about the proper and correct use of social media, and the importance of maintaining good sleep patterns so that children can control their playing time and apply good sleep (Putri Gavinta *et al.*, 2021)

Based on the description above, the purpose of this study was to analyze the relationship between the duration of social media use and disturbed sleep patterns in children aged 10-12 years. The implication of this study is to emphasize the important role of parents in controlling the use of social media for school-aged children. The findings from this study provide information regarding sleep pattern disorders for school-aged children. School-age children who experience disturbed sleep patterns will hurt the learning process at school. Information about the relationship between social media use and sleep pattern disorders is expected to be a basis for caring for school-aged children.

RESEARCH METHODS

Research The research design uses a correlational approach with a cross-sectional approach. The population of children aged 10-12 years at SD Negeri Kepatihan 05 Jember is 250 respondents. A sample of 104 was taken by simple random sampling.

The variable duration of social media use is the length of time children aged 10-12 years use social media as measured by an observation sheet in minutes. The respondent filled out the observation sheet independently. Social media here is interpreted as a whole both watching YouTube, playing games, and communicating. The measurement of the variable duration of social media use uses an ordinal scale, with the category of 30-120 minutes normal, and >120 minutes abnormal.

The sleep pattern disturbance variable was defined as the disturbance in the amount and quality of sleep (SDKI, 2019). Sleep quantity was defined as the experience of being disturbed by the number of hours and sleep patterns measured using a questionnaire sheet. Sleep quality is defined as the negative feelings expressed by respondents after waking up. Disturbance of sleep patterns on a scale of 0-3. Score 0 if never, score 1 if rarely (1-3x/week), score 2 if often (4-6x/week), score 3 if always (7x/week). Furthermore, the measurement of both sleep pattern disturbances uses an ordinal scale. Normal category (no disturbance) with a value of 10-20, abnormal 21-40. Questionnaire variables of sleep pattern disturbances have been tested for validity and reliability. The results of the validity test of the value of the r count are greater than the r table ($r = 0.632$) so all statement items are declared valid. The reliability test obtained a Cronbach α value of 0.925 so that the questionnaire was declared reliable.

Data analysis was performed in categorical form. Data analysis to determine the relationship between two variables on a categorical scale used the Spearman rho Correlation test. Hypothesis testing is done by interpreting the significant value (p) for a one-way test, if p is less than or equal to the value of α (0.05) it means a significant relationship. The correlation coefficient shows the direction of the relationship. The positive sign (+) indicates a unidirectional relationship, meaning that the value of the duration of using social media increases, and the disturbance pattern also increases. The negative sign (-) indicates an inverse relationship, meaning that when one variable increases, the other variable decreases. The strength of the relationship is assessed from the calculated r value (correlation coefficient) which moves from -1 to 1. The closer to 1, the stronger the relationship.

This research has passed the ethics test at the Research Ethics Commission (KEPK) Faculty of Health Sciences, Muhammadiyah University of Jember, with number 0184/KEPK/FIKES/XII/2023.

RESULT

Table 1
Demographic characteristics of respondents
at SD Negeri Kepatihan 05 Jember with n=104

Demographic characteristics	Frequency (Person)	Percentage (%)
Gender		
Male	40	38.5
Female	64	61.5
Age		
10 Years	32	30.8
11 Years	72	69.2
Class		
Class 4	60	57.6
Class 5	44	42.4

Data Source: 2023 Primary

Table 1 explains that more than half of the respondents are women and that students aged 10 years have a higher frequency than those aged 11 years. Table 1 also explains that there are more grade 4 students than grade 5 students.

Table 2
Relationship Between Duration of Social Media Use with Disturbed Sleep Patterns in Children Aged 10-12 Years at SD Negeri Kepatihan 05 Jember

Duration of Use	Disturbance of Sleep Pattern		Total	<i>p-value</i>	<i>r</i>
	Normal	Abnormal			
30-120 Minutes (normal)	4	23	27	0.019	0.230
>120 Minutes (abnormal)	2	75	77		
Total	6	98	154		

Data Source: 2023 Primary

Based on table 2 shows that the duration of social media use in children in the abnormal category is greater than the duration of normal use. Most sleep pattern disorders in children aged 10-12 years at SD Negeri Kepatihan 05 Jember are in the abnormal category, which is greater than the normal category. There is a relationship between the duration of social media use and disturbed sleep patterns. The direction of the relationship is positive with weak strength. The longer the duration of social media use, the more disturbed the sleep pattern will be.

DISCUSSION

The results of this study indicate that there is a relationship between the duration of social media use and sleep pattern disturbances. Social media use by school-age children has reached abnormal levels, meaning that the duration of social media use has been beyond predetermined limits. The duration of social media use used in this study was >121 minutes/day. The average school-age child uses social media for entertainment needs and eliminates boredom after activities. In addition, social media is also a medium of learning to access information. The results of this study support research on children in the Tembalang area, Semarang, that the duration of social media use affects sleep pattern disturbances in children (Diantoro *et al.*, 2021). In contrast to research conducted on children in the Bandung community, positive results were obtained regarding the use of social media as a medium of entertainment (Yuniat *et al.*, 2019). The results of this study support the findings which prove that there is a significant effect between the duration of social media use and disturbed sleep patterns in elementary school-aged children in Denpasar, Bali (Witantri *et al.*, 2022).

The results of this study indicate that disrupted sleep patterns in children greatly affect daily activities, for example, drowsiness while attending class, the body feeling tired, and children feeling tired and lethargic (Eritriana *et al.*, 2022). There are several kinds of disorders in children, starting from transitions-sleep-wake, difficulty sleeping at night, and frequent awakenings at night (Manurung, 2020). Disorders of sleep patterns are found in early childhood because early childhood still does not understand the dangers that will be experienced if they do not get quality sleep (Tanjung *et al.*, 2016).

The results of this study indicate that there is a relationship between the duration of social media use and disturbed sleep patterns in children aged 10-12 years. Based on the Problematic

Smartphone Use Theory, there is a repeated desire to use social media this causes children to experience sleep pattern disturbances (Busch *et al.*, 2021). This relationship is proven that there is a relationship between the duration of social media use and sleep pattern disturbances in grades 4 and 5 students (Indriani, 2022). The results of this study support research conducted at SD Semarang which concluded that the level of social media use in children tends to be high, which means that students have a high potential for disrupted sleep patterns (Fatimah *et al.*, 2021). It is also similar to the Citra Bangsa Kubang Christian Elementary School study which proves that there is a relationship between the duration of social media use and sleep pattern disturbances (Balbina, 2021).

CONCLUSION

This study concluded that the duration of social media use has an impact on disrupting sleep patterns in children aged 10-12 years. Therefore a policy is needed to carry out intensive educational efforts to reduce the incidence of sleep pattern disturbances at the elementary school level.

BIBLIOGRAPHY

- Balbina, W. (2021). Intensitas Menggunakan Gadget Mempengaruhi Kualitas Tidur Anak Sekolah. *Jurnal Keperawatan Update*, 12(04), 190–200.
- Busch, P. A., & McCarthy, S. (2021). Antecedents and consequences of problematic smartphone use: A systematic literature review of an emerging research area. *Computers in Human Behavior*, 114(May 2020), 106414. <https://doi.org/10.1016/j.chb.2020.106414>
- Dameyanti Manurung, N. (2020). Durasi Penggunaan Media Sosial Dan Insomnia Pada Remaja : Studi Literatur Sebagai. *Recruit Researchers*, 344(November), 0–7.
- Eritriana, R. E., & . P. (2022). Hubungan Penggunaan Gadget dengan Pola Tidur Anak Usia Sekolah (10-12 tahun) di SDN Bintoyo Kecamatan Padas Kabupaten Ngawi. *E-Journal Cakra Medika*, 9(2), 44. <https://doi.org/10.55313/ojs.v9i2.117>
- Fatimah Diantoro, M. H., Anantyo, D. T., & Rahmadi, F. A. (2021). Hubungan Durasi Paparan Media Elektronik Terhadap Pola Tidur Anak Usia 10-13 Tahun. *Sari Pediatri*, 22(6), 359. <https://doi.org/10.14238/sp22.6.2021.359-63>
- Fatriansari, A., & Afriyani, R. (2021). Penggunaan Media Sosial Dengan Kejadian Insomnia Pada Mahasiswa STIK Siti Khadijah Palembang. *Jurnal Keperawatan Sriwijaya*, 8(2), 12–18. <https://doi.org/10.32539/JKS.V8i2.15298>
- Hepilita, Y., & Gantas, A. A. (2018). Hubungan Durasi Penggunaan Media Sosial dengan Gangguan Pola Tidur pada Anak Usia 12 sampai 14 Tahun di SMP Negeri 1 Langke Rembong. *Jurnal Wawasan Kesehatan*, 3(2), 78–87.
- Indriani, N. (2022). Pola Tidur Anak Usia 10-12 Tahun dengan Riwayat Penggunaan Smartphone. *Profesional Health Journal*, 4(1), 148–154. <https://doi.org/10.54832/phj.v4i1.339>
- Isnainingsih, T., & Sari, F. W. (2022). Hubungan Perilaku dan Frekuensi Penggunaan Gadget dengan Kualitas Tidur pada Remaja. *Formosa Journal of Science and Technology*, 1(4), 205–216. <https://doi.org/10.55927/fjst.v1i4.877>
- Masril, M., & Lubis, F. W. (2020). Analisis Penggunaan Media Sosial dan Penyebaran Hoax Di Kota Medan. *Jurnal Simbolika: Research and Learning in Communication Study*, 6(1),

- 11–22. <https://doi.org/10.31289/simbollika.v6i1.2937>
- Nila, H., & Herlia, S. N. (2020). The Relationship Between the Habit of Playing Online Games in School-Age Children with. *Kesehatan Global*, 3(3), 116–122.
- Purboningsih, E. R., Massar, K., Hinduan, Z. R., Agustiani, H., Ruiter, R. A. C., & Verduyn, P. (2023). Perception and use of social media by Indonesian adolescents and parents: A qualitative study. *Frontiers in Psychology*, 13, 1–18. <https://doi.org/10.3389/fpsyg.2022.985112>
- Putri Gavinta D A, F. K. (2021). Keterlibatan Orang Tua Terhadap Intervensi Anak Usia Dini Yang Mengalami Kesulitan Tidur (Insomnia). *Tumbuh Kembang: Kajian Teori Dan Pembelajaran PAUD*, 8(1), 1–11. <https://doi.org/10.36706/jtk.v8i1.13715>
- Radityo, W. E. (2020). Depresi dan Gangguan Tidur. *Medika Udayana*, 1(1), 1–16.
- Rodli, A. F., & Wulandari, F. (2022). Daampak Media Sosial Terhadap Perubahan Siswa Sekolah Dasar. *Jurnal Pendidikan Dasar Indonesia*, 7(2), 46–52.
- SDKI. (2019). Standar Diagnosis Keperawatan Indonesia. DPP PPNI.
- Tanjung, M. C., & Sekartini, R. (2016). Masalah Tidur pada Anak. *Sari Pediatri*, 6(3), 138. <https://doi.org/10.14238/sp6.3.2004.138-42>
- Wahyuningrum, E. (2021). Review: Gangguan Tidur Anak Usia Sekolah. *Jurnal Keperawatan*, 13(3), 699–708.
- Witantri, A. A. A., Putri, S., Lestari Mp, P., Ketut, I., & Widarsa, T. (2022). Hubungan Lama Penggunaan Gadget dengan Gangguan Pola Tidur pada Anak Sekolah Dasar Kelas 4 Sampai 6 di Denpasar. *Aesculapius Medical Journal* /, 2(2), 1–6.
- Yuniati, U., & Puspitasari, E. E. (2019). Motif Pendengaran Radio Di Era Perkembangan Teknologi Informasi (Studi Kepuasan Penggunaan Media Pada Generasi Z DI Bandung). *J-IKA*, 6(2), 83–90. <https://doi.org/10.31294/kom.v6i2.6504>