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# Healthy Smartphone Use and Physical Activity Education as an Effort to Promote Mental Health Among School Adolescents

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### Abstract

*Adolescents are vulnerable to psychosocial problems due to academic pressure, developmental changes, and intensive exposure to digital technology. Excessive smartphone use and low levels of physical activity may negatively affect sleep quality, concentration, stress, and psychological well-being. This community service activity was conducted to improve students' understanding of healthy smartphone use and physical activity as part of school-based mental health promotion. The activity employed an educative-participatory approach through interactive educational sessions, discussion, and health promotion media involving high school students. Educational materials included healthy digital behavior, the impact of sedentary lifestyles, the importance of physical activity, sleep quality, and simple stress management strategies. Students actively participated in the sessions and were able to identify the potential effects of excessive smartphone use and sedentary behavior on mental health. Participants also demonstrated increased awareness regarding balanced technology use and the importance of physical activity in daily life. These findings indicate that school-based education on healthy smartphone use and physical activity may serve as a practical promotive-preventive strategy to support adolescent mental health and improve mental health literacy among students.*

**Keywords:** adolescents, smartphone, physical activity, mental health, school health promotion

## INTRODUCTION

Adolescents are an age group undergoing a developmental transition from childhood to adulthood. During this phase, rapid biological, psychological, social, and cognitive changes occur. These changes make adolescents more vulnerable to psychosocial pressures, particularly when facing academic demands, changes in social relationships, and increasingly intensive exposure to digital technology.

The development of digital technology has altered the activity patterns of school adolescents. Smartphones have become an essential part of daily life as they are used for communication, learning, entertainment, information seeking, and social interaction. However, uncontrolled smartphone use may lead to various negative consequences, such as impaired concentration, reduced sleep duration, delays in completing academic tasks, decreased physical activity, and increased sedentary behavior [4], [6].

Physical activity is one of the important protective factors in maintaining adolescent mental health. Adequate physical activity can help improve sleep quality, enhance mood, strengthen social interactions, and reduce tendencies toward stress and anxiety [3], [5]. In contrast, low levels of physical activity and prolonged sitting duration may increase the risk of both physical and psychological health problems.

This community service activity was designed based on promotive and preventive needs within the school environment. Previous research by Alfiandari et al. demonstrated that stress levels and academic perception ability among adolescents did not differ significantly based on gender or body mass index, and no significant relationship was found between stress and academic perception [1]. These findings indicate that adolescent psychosocial vulnerability cannot be adequately explained solely by biological factors, but should also be understood through behavioral and environmental factors, including physical activity, digital behavior, social support, and healthy lifestyle patterns.

Based on this background, an educational activity on healthy smartphone use and physical activity was conducted as an effort to promote mental health among school adolescents. This activity aimed to improve students' mental health literacy, strengthen their understanding of healthy digital behavior, and encourage physical activity as a simple strategy for maintaining psychological well-being.

## **METHODS**

This community service activity employed a school-based educative-participatory approach and was conducted in May 2025 at SMA Negeri 2 Parepare. The activity involved 53 high school students who participated in educational sessions focusing on healthy smartphone use, physical activity, sleep quality, and adolescent mental health. The program was implemented through several stages, including preparation, educational material development, interactive education sessions, discussion, and evaluation. The educational activity lasted approximately 120 minutes and utilized presentations, interactive discussion, and question-and-answer sessions. Participant understanding and engagement were evaluated observationally through attendance, participation during discussion, responses to questions, and feedback regarding the educational materials.

The preparation stage involved coordination with the school to determine the target participants, schedule, venue requirements, and supporting media. The community service team subsequently developed educational materials covering adolescent mental health, healthy smartphone use, the impact of sedentary behavior, the benefits of physical activity, sleep quality, and simple stress management strategies.

The implementation phase was carried out through interactive health education sessions using presentations and group discussion. Participants were encouraged to identify their daily smartphone usage patterns, recognize signs of excessive smartphone use, understand the relationship between screen time and sleep quality, and discuss realistic forms of physical activity that could be performed both at school and at home.

The evaluation of the activity was conducted observationally through participants' involvement in discussion, their ability to answer questions, and their responses to the educational messages delivered. This activity did not involve clinical interventions or invasive procedures and focused primarily on health promotion and improving adolescent mental health literacy.

**Table 1. Stages of the Community Service Activity**

Stage	Activity	Output
Preparation	Coordination with the school and preparation of educational materials	Education materials and media prepared for implementation
Implementation	Interactive education regarding healthy smartphone use, physical activity, and mental health	Students participated in health education sessions and discussion
Discussion	Question-and-answer session regarding digital habits, stress, sleep, and physical activity	Participants were able to relate daily behaviors to mental health
Evaluation	Assessment of participant engagement and responses	General description of participants' comprehension and level of enthusiasm.

## RESULTS AND DISCUSSION

The educational activity was implemented successfully and received positive responses from the participants. A total of 53 students from SMA Negeri 2 Parepare attended the activity conducted in May 2025. Participants actively engaged in discussion regarding smartphone use habits, sleep quality, concentration, physical activity, and mental health awareness. Most participants were able to identify the potential negative effects of excessive smartphone use, including sleep disturbances, decreased concentration, reduced physical activity, and procrastination tendencies. In addition, participants demonstrated improved understanding regarding healthy digital behavior and the importance of regular physical activity as part of maintaining psychological well-being.



**Figure 1 and 2.** Community Services Documentation

Participants were able to recognize that excessive smartphone use may negatively affect mental health through several mechanisms, including sleep disturbances, decreased concentration, reduced physical movement, and increased tendencies toward procrastination. In addition, participants understood that healthy smartphone use does not require complete avoidance of technology, but rather the ability to use technology wisely, responsibly, and in a balanced manner.

During the physical activity session, participants gained an understanding that simple forms of movement such as walking, light exercise, stretching, group games, and extracurricular activities may help reduce emotional tension and improve psychological well-being. Participants were also encouraged to reduce prolonged sitting duration and incorporate light physical activity into their daily routines.

Overall, the activity contributed to increased participant awareness regarding the importance of maintaining balance between technology use, physical activity, sleep quality, and mental health. Observational findings indicated that educational approaches using examples from everyday life were more easily understood by students and encouraged active participation during discussion.

**Table 2. Summary of Educational Activity Outcomes**

Educational Aspect	Participant Responses	Significance of the Activity
Healthy smartphone use	Participants actively discussed screen time duration, sleep disturbances, and concentration problems	Digital health literacy among adolescents needs to be strengthened
Physical activity	Participants understood the benefits of simple physical activities	Physical activity can serve as a promotive strategy for mental health
Stress management	Participants were able to mention simple ways to manage stress	Stress screening and education need to be conducted continuously
School mental health	Participants recognized the importance of support from friends, teachers, and family	Schools have the potential to become centers for adolescent mental health promotion

This community service activity highlights the importance of school-based education regarding healthy smartphone use and physical activity among adolescents. Previous educational intervention studies have demonstrated that increasing adolescent awareness regarding digital behavior and active lifestyles may contribute positively to mental health promotion and psychosocial well-being. The findings of this activity are consistent with previous community-based educational programs emphasizing that schools are strategic settings for preventive and promotive mental health interventions. The active participation observed during the activity indicates that interactive educational approaches are appropriate for adolescents and may improve engagement and understanding of healthy lifestyle behaviors.

Physical activity is an important component of mental health promotion. In adolescents, physical activity not only improves physical fitness but also contributes to emotional regulation, stress reduction, better sleep quality, and stronger social interaction [3], [5]. Therefore, educational messages emphasizing physical activity as part of a mental health maintenance strategy are important to be integrated into school health programs.

This activity also demonstrates that schools are strategic settings for mental health promotion. Since students spend a considerable amount of time in school environments, simple interventions such as health education, interactive discussion, strengthening the role of teachers, and integrating physical activity into daily school routines may provide both promotive and preventive benefits. School Health Unit (UKS) programs may be expanded beyond physical health services to include mental health literacy, healthy digital behavior, and early detection of psychosocial problems.

From a sustainability perspective, this educational activity may be developed into a routine school-based program through healthy smartphone use campaigns, daily physical activity challenges, sleep hygiene education, and group counseling sessions. Collaboration among schools, healthcare professionals, parents, and primary healthcare centers is necessary to ensure that adolescent mental health promotion becomes an ongoing component of a supportive school culture rather than a one-time activity.

This community service activity has several limitations because the evaluation was conducted observationally and did not include quantitative pre-test and post-test measurements. Therefore, future activities are recommended to use structured evaluation instruments to assess improvements in knowledge, attitudes, and behavioral changes among students following the educational intervention.

## **CONCLUSIONS**

Education on healthy smartphone use and physical activity may serve as a relevant promotive-preventive strategy in supporting adolescent mental health within school settings. This activity helped students understand the relationship between digital behavior, physical activity, sleep quality, concentration, and psychological well-being.

Schools have a strategic role as centers for adolescent mental health promotion. Similar educational activities should be implemented continuously through collaboration among schools, healthcare professionals, teachers, parents, and primary healthcare centers. Future school programs may integrate healthy smartphone campaigns, routine physical activity promotion, sleep hygiene education, and mental health literacy sessions into regular school health activities. Further evaluation using structured quantitative assessment methods is also recommended to assess improvements in students' knowledge, attitudes, and behavioral changes following the educational intervention.

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#### **REFERENCES**

- [1] A. D. Alfiandari, R. Ichsan, N. M. Aminuddin, and N. M. Damry, "The relationship between stress and adolescent academic perception ability based on gender and body mass index," *Physical Activity, Nutrition and Health Sciences Journal*, vol. 2, no. 1, pp. 109-118, 2026.
- [2] World Health Organization, "Adolescent mental health," Geneva: WHO, 2025.
- [3] World Health Organization, *WHO Guidelines on Physical Activity and Sedentary Behaviour*. Geneva: WHO, 2020.
- [4] B. Keles, N. McCrae, and A. Grealish, "A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents," *International Journal of Adolescence and Youth*, vol. 25, no. 1, pp. 79-93, 2020, doi:10.1080/02673843.2019.1590851.
- [5] G. Zhang, W. Feng, L. Zhao, and X. Zhao, "The association between physical activity, self-efficacy, stress self-management and mental health among adolescents," *Scientific Reports*, vol. 14, p. 5488, 2024.
- [6] F. Reer, W. Tang, and T. Quandt, "Psychosocial well-being and social aspects of smartphone use disorder: A systematic review," *Frontiers in Psychology*, vol. 13, 2022.
- [7] M. M. Bibiloni, J. Pich, P. Canaves, et al., "Body image and self-perception among adolescents: associations with weight status," *Nutrients*, vol. 13, no. 11, 2021.
- [8] E. G. Mekonen, D. L. Workie, M. A. Gebreayezgi, and T. M. Mekuria, "Gender difference in perceived academic stress and emotional intelligence among adolescents," *Heliyon*, vol. 7, no. 4, e06798, 2021.