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The relationship between health promotion media and high school students' physical activity

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Abstract

This study aims to analyze the relationship between the use of social media for health promotion and the level of physical activity of high school students in Kulon Progo Regency. This study uses an ex-post facto method with a population of high school students in the Kulon Progo region. Data collection was carried out through questionnaires and the International Physical Activity Questionnaire (IPAQ) to measure the level of utilization of health promotion media and physical activity. Data analysis used a correlation test to determine the relationship between variables. The results showed a significant relationship between the level of exposure to health promotion media and the level of physical activity of students. In SMA BOPKRI Wates the Chi-Square score was 0.003, in SMA Ma'arif Wates the Chi-Square score was 0.000, in SMA Muhammadiyah Wates the Chi-Square score was 0.000, and in SMAIT Abu Bakar the Chi-Square score was 0.000. These results indicate that social media is an effective means to promote healthy lifestyle behaviors and increase physical activity among adolescents, as well as being the basis for developing a more optimal digital-based health promotion strategy.

Keywords: social media, health promotion, physical activity, high school students, Kulon Progo

1. Introduction

Traditional mass media such as newspapers, radio, and television were the primary sources of information for the public in the 1990s before digitalization [1]. However, with advances in information and communication technology, media have undergone a significant shift toward digitalization, particularly with the emergence of the internet and social media [2]. Health promotion has begun utilizing social media as a tool to disseminate health information more quickly and effectively. Socialization regarding healthy lifestyles, disease prevention, and the importance of physical activity is increasingly being conducted through social media [3]. Research conducted by [4] found that health promotion campaigns through Facebook, Twitter, Instagram, and YouTube were effective in raising adolescent awareness of the importance of physical activity. Another study by [5] showed that social media users utilized it to gain health knowledge.

Social media provides quick and easy access to a variety of information and knowledge. However, it also has negative impacts, such as Fear of Missing Out (FoMO), which refers to the fear or worry of missing out on something popular or trending [6]. This negatively impacts a person's mental and emotional health. Negative experiences associated with relational interactions seem to mirror or deviate from their offline counterparts [7]. Excessive time spent on social media can lead to anxiety and depression.

Social media has transformed the way we communicate and access information, including health information [8]. Social media can be a powerful tool for increasing physical activity motivation if used wisely. However, there is still a research gap regarding the effectiveness of social media in increasing physical activity at the local level, especially in areas like Kulon Progo. As a developing region, it is important to understand the extent to which social media plays a role in shaping students' physical activity habits in this region. Therefore, this study aims to analyze the relationship between the use of social media for health promotion and students' physical activity in Kulon Progo. By understanding these interaction patterns, it is hoped that the results of this study can provide insights into designing more effective, digital

-based health promotion strategies. The Central Statistics Agency (BPS) explains that Wates sub-district has administrative areas at the village/urban/urban level, consisting of three urban areas and five rural areas. Sedentary behavior patterns, sleep duration, and quality of children in urban and rural areas are quite different (Nurfadilah *et al.*, 2017). Seeing this phenomenon, the researchers wanted to examine the relationship between social media for health promotion and physical activity of high school students in Kulon Progo Regency.

2. Materials and Method

This research is an ex-post facto study. The samples used in this study were 4 Upper Middle Schools, namely: 1) SMA

Bopkri Wates, 2) SMA Ma'arif Wates, 3) SMA Muhammadiyah Wates, and 4) SMA IT Abu Bakar Boarding School Kulon Progo. The instrument used in this study was the Health Promotion Social Media Questionnaire. To determine the level of social media use. The instrument to determine the level of Physical Activity used the IPAQ (International Physical Activity Questionnaire).

3. Results and Discussion

1.1 Use of Health Promotion Media

The following are the results of the distribution of the use of health promotion media carried out in four schools in Kulonprogo.

Table 1: Level of Social Media Usage

Social Media Usage Level	Bopkri Wates High School		Sma Ma'arif Wates		Muhammadiyah Wates High School		Sma Abu Bakar Kulon Progo	
	n	%	n	%	n	%	n	%
Low	8	17,78	10	20	11	22	7	11,67
Currently	35	77,78	40	80	36	72	52	86,67
High	2	4,44	0	0	3	6	1	1,67
Total	45	100	50	100	50	100	60	100

And the following is presented in graphic form.

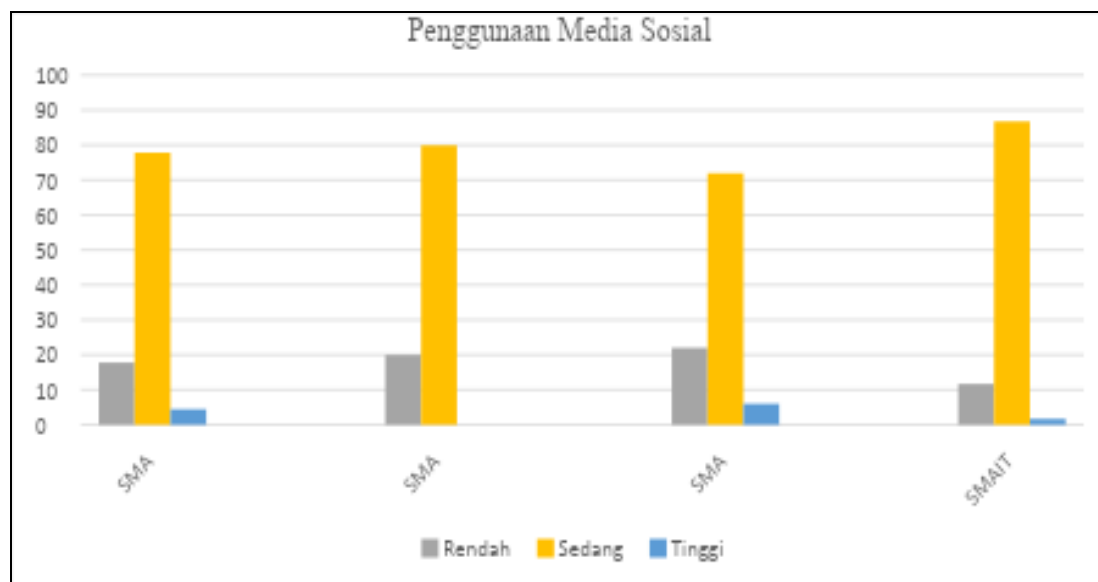


Fig 1: Use of social media

Overall, the four schools exhibited a similar pattern, with the majority of students falling into the moderate category of health promotion media use. No schools were dominated by

the high category, indicating that the optimization of health promotion media use still needs to be improved across all schools.

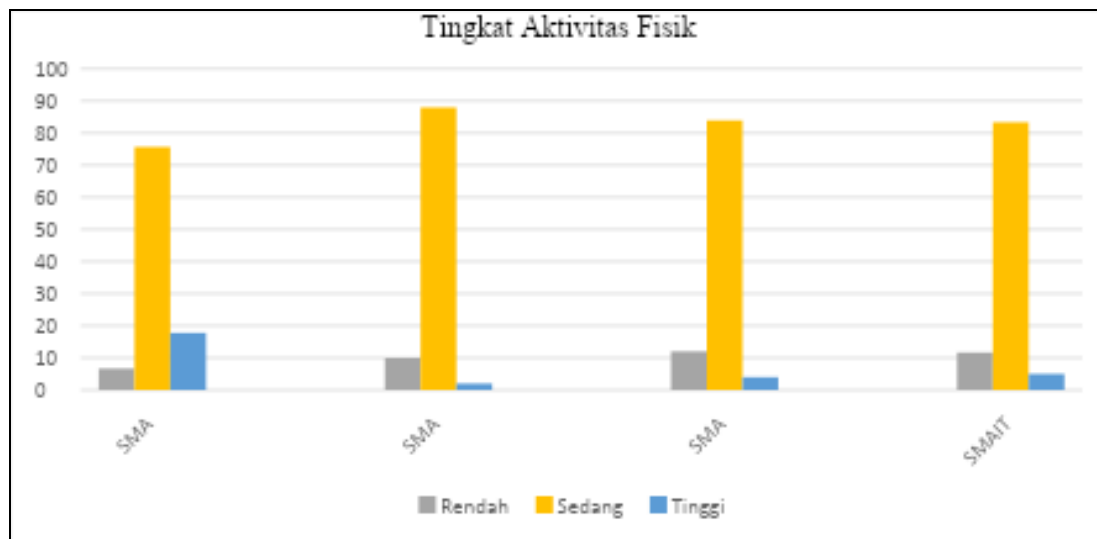
1.2 Physical activity

The following are the results of the distribution of Physical Activity Based on IPAQ conducted in four schools in Kulonprogo.

Table 2: Physical Activity Level

Physical Activity Level	Bopkri Wates High School		Sma Ma'arif Wates		Muhammadiyah Wates High School		Sma Abu Bakar Kulon Progo	
	n	%	n	%	n	%	n	%
Low	3	6,67	5	10	6	12	7	11,67
Currently	34	75,67	44	88	42	84	50	83,33
High	8	17,78	1	2	2	4	3	5
Total	45	100	50	100	50	100	60	100

The following is presented in graphic form.

**Fig 2:** Physical Activity Level

The majority of students are in the moderate physical activity category, indicating that most students already have fairly good physical activity habits.

1.3 The Relationship between Health Promotion Media and Physical Activity Bopkri Wates High School

Table 3: Promotion Media Physical Activity Crosstabulation Count Physical Activity

Promotional Media					
	Low	Currently	High	Total	
	3	3	2	8	
	0	29	6	35	
	0	2	0	2	
Total		3	34	8	45

These results indicate that students with moderate exposure to health promotion media are more dominant, but this is not always directly proportional to high levels of physical activity.

Table 4: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.412 ^a	4	.003
Likelihood Ratio	13.559	4	.009
Linear-by-Linear Association	1.272	1	.259
N of Valid Cases	45		

The results of the Chi-Square test show a Pearson Chi-Square value of 16.412, df = 4, p = 0.003. Since the p value is <0.05, it can be concluded that there is a significant relationship between the level of use of health promotion media and the level of physical activity of students at SMA BOPKRI Wates.

Sma Ma'arif Wates

Table 5: Promotion Media * Physical Activity Crosstabulation Count

Promotional Media		Physical Activity			Total
		Low	Currently	High	
	Low	5	5	0	10
	Currently	0	39	1	40
Total		5	44	1	50

These results show a dominance of the moderate category in both variables, with little variation towards high physical activity.

Table 6: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.301 ^a	2	.000
Likelihood Ratio	18.884	2	.000
Linear-by-Linear Association	19.022	1	.000
N of Valid Cases	50		

a. 4 cells (66.7%) have expected count less than 5. The minimum expected count is .20.

The results of the Pearson Chi-Square test = 22.301, df = 2, p = 0.000 → $p < 0.05$, show that there is a significant relationship between the level of use of health promotion media and the level of physical activity of students.

Muhammadiyah Wates High School**Table 7:** Promotion Media * Physical Activity Crosstabulation Count

		Physical Activity			Total
		Low	Currently	High	
Promotional Media	Low	5	5	0	10
	Currently	0	36	1	37
	High	0	3	0	3
Total		5	44	1	50

These results show that most students are in the moderate category in terms of both promotional media and physical activity, with very little variation in the high category.

Table 8: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.405 ^a	4	.000
Likelihood Ratio	19.042	4	.001
Linear-by-Linear Association	14.148	1	.000
N of Valid Cases	50		

Pearson Chi-Square Test Results = 22.405, df = 4, p = 0.000 → because $p < 0.05$, there is a significant relationship between the level of use of health promotion media and students' physical activity.

Smaik Abu Bakar Boarding School Kulon Progo**Table 9:** Promotion Media * Physical Activity Crosstabulation Count

		Physical Activity			Total
		Low	Currently	High	
Promotional Media	Low	7	0	0	7
	Currently	0	50	1	51
	High	0	0	2	2
Total		7	50	3	60

These results indicate that there is a very strong relationship: the higher the exposure to health promotion media, the higher the level of physical activity of students.

Table 10: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	99.216 ^a	4	.000
Likelihood Ratio	56.441	4	.000
Linear-by-Linear Association	53.044	1	.000
N of Valid Cases	60		

The results of the Pearson Chi-Square test = 99.216, df = 4, p = 0.000 → $p < 0.05$, indicate that there is a very significant relationship between the use of health promotion media and the level of physical activity.

Discussion

The results of the study indicate that the level of health promotion media use in four high schools in Kulon Progo Regency is generally in the moderate category. Although a small number of students fall into the low or high categories, the majority of respondents use social media or health promotion media moderately to obtain health information. This condition reflects that health promotion media are quite familiar and used by students, but their utilization is not yet optimal. This finding aligns with the opinion of O'Donnell *et al.* (2023) that social media can be an effective means of disseminating health information, but the level of utilization is influenced by factors such as access, digital literacy, and audience interest.

In terms of physical activity, the study also showed that the majority of students in the four schools were in the moderate category. This finding suggests that the physical activity of high school students in Kulon Progo Regency is relatively good, but has not yet significantly reached the high category. School environmental factors, sedentary study habits, and adolescent lifestyles that involve spending more time on digital devices may contribute to the low proportion of high-level physical activity (Dasso, 2019).

Analysis of the relationship between the level of health

promotion media use and physical activity levels revealed a significant relationship across all schools studied. In fact, at SMAIT Abu Bakar Kulon Progo, this relationship was particularly strong; all students with high levels of health promotion media exposure were in the high physical activity category. This finding supports research by Nadobnik (2019) and Günther *et al.* (2021), which states that health campaigns through social media can influence behavior and increase public awareness, including encouraging individuals to be more physically active.

Overall, this relationship pattern suggests that health promotion media, particularly social media, has significant potential as a means of health behavior intervention in adolescents. With appropriate and engaging information, students can be more motivated to engage in physical activity. However, the predominant distribution of the "moderate" category suggests that digital health promotion strategies still need to be improved to make health messages more interactive and persuasive. Jacobs *et al.* (2017) emphasized the importance of evidence-based, attractively packaged content tailored to the characteristics of adolescent audiences to effectively change behavior. Furthermore, the results of this study also highlight the importance of school and parental involvement in creating an environment that supports physical

activity. Health promotion media can be used as a complement to school health programs, such as regular exercise, extracurricular sports, or community-based health campaigns. This collaboration can strengthen the influence of digital media and bridge the gap between knowledge and healthy behavior. Thus, this study confirms the significant role of health promotion media as a tool to increase awareness and healthy lifestyle behaviors among adolescents. Optimizing social media, coupled with a supportive environment approach, can be an effective strategy to encourage higher and more sustainable levels of physical activity.

2. Conclusion

Based on the results of research on the relationship between health promotion media and physical activity of high school students in Kulon Progo Regency, it can be concluded:

The level of health promotion media use in the four high schools studied was mostly moderate. This means that students are familiar with health promotion media, but their use is not yet optimal in supporting healthy lifestyles.

The physical activity levels of high school students are mostly in the moderate category. This indicates that although students are physically active, the proportion of students with high activity levels is still low.

There was a significant relationship between the use of health promotion media and students' physical activity across all schools. Students with greater exposure to health promotion media tended to have higher levels of physical activity. This finding strengthens evidence that health promotion media, particularly social media, can influence adolescents' health behaviors.

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