

## The Relationship Between Social Media Platform Usage and Sedentary Lifestyle among Teenagers

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### Abstract

**Introduction:** The development of digital technology has driven increased social media use, particularly among teenagers. Increased access to social media has the potential to reduce physical activity levels and encourage a sedentary lifestyle.

**Objective:** This study aims to analyze the relationship between the dominant social media platforms accessed and the level of sedentary lifestyle in adolescents at SMPN X Bandung City.

**Method:** This research method used a quantitative correlational approach with a cross-sectional design. The sample was selected using a proportionate random sampling technique from students in grades VII, VIII, and IX. The instruments used were a self-report questionnaire to determine the dominant social media platform and the Adolescent Sedentary Activity Questionnaire (ASAQ) to measure the level of sedentary lifestyle. Data analysis was carried out using multiple linear regression tests using JASP software.

**Result:** The results showed that the regression model was significant ( $F = 16.954$ ;  $p < .001$ ) with an  $R^2$  value of 0.196, which means that 19.6% of the variation in sedentary lifestyle can be explained by the use of TikTok, Instagram, WhatsApp, and YouTube platforms. Partially, TikTok ( $p < .001$ ) and YouTube ( $p = .005$ ) significantly influenced sedentary lifestyle, with TikTok being the most dominant platform influencing sedentary lifestyle levels in adolescents. Meanwhile, Instagram ( $p = .081$ ) and WhatsApp ( $p = .927$ ) did not show a significant effect.

**Conclusion:** This study concludes that certain social media platforms, particularly TikTok and YouTube, are associated with increased sedentary lifestyles in adolescents. These findings can be used as a basis for schools, parents, and health agencies in developing education and interventions to reduce sedentary lifestyles by regulating social media use more wisely.

**Keywords:** low physical activity, sedentary lifestyle, social media

## Introduction

The development of digital technology in Indonesia has driven rapid internet usage (Prasetyo et al., 2024). This is evidenced by the findings of a 2020 digital report, which stated that Indonesia ranks fourth in the world in terms of population, with approximately 64% of its citizens having internet access (Stefanny & Tiara, 2021). Since the advent of the internet and its ease of access, various aspects of life have changed, including triggering changes in physical activity due to a lifestyle increasingly dependent on screens and internet connections (Auliya et al., 2023). In 2024, the number of internet users in Indonesia is recorded at around 221.56 million people, which is equivalent to approximately 79.5% of the total population. According to APJII (2023) data, internet penetration rates in Indonesia vary between provinces, with West Java among the regions with very high internet access, reaching approximately 82.73% (Association of Indonesian Internet Service Providers, 2023).

The majority of Indonesians connected to the internet use it to access social media. According to a 2024 report by We Are Social and Hootsuite, approximately 167 million individuals in Indonesia use social media, or approximately 60.4% of the country's population. Teenagers are the highest social media users, at 93% (Chaddock, 2024). Those aged 9-19 are among the age groups with the highest social media usage, at 93.52% (Kominform, 2020). 69.5% of teenagers have at least one account on a social media platform, including YouTube (64.7%), TikTok (67.1%), and Instagram (66.0%) (Nagata et al., 2025). Based on this data, teenagers are an age group that frequently uses social media.

Social media provides easy communication and information, but it also has negative impacts on the lives of teenagers (Nur Cahya et al., 2023). The ease of accessing social media encourages individuals to spend more time in front of screens (Maulinda & Priasmoro, 2025). This indirectly reduces daily physical activity. Insufficient physical activity can contribute to the development of a sedentary lifestyle (Hanifah et al., 2023). A sedentary lifestyle is a term for a lifestyle with very low physical activity or laziness (Rahayu & Kusuma, 2022). According to the WHO (2024), 81% among adolescents aged 11-17 years worldwide does not meet recommended standards daily physical activity of at least 60 minutes per day (WHO, 2024). A total of 62.6% of the population aged over 10 years is considered physically active and 48.5% consists of groups that are not involved in physical activity cite a lack of time (SKI, 2023). A sedentary lifestyle is related to minimal levels of physical activity, including rest or movement (Hayati et al., 2022). Sedentary lifestyles are categorized into three categories: low refers to less than 2 hours of sedentary activity per day, moderate refers to 2-5 daily duration in hours, and high level refers to more than 5 hours of sedentary activity per day (Hayati et al., 2022). A sedentary lifestyle can contribute to the emergence of a number of health problems, such as difficulty processing fats and sugars, impaired blood circulation, inflammation, and hormonal imbalances. In adolescents, it is often associated with risk factors for obesity, symptoms of depression, anxiety, hypertension, and physiological and psychological disorders (Hayati et al., 2022).

Several study findings indicate a relationship between social media to a sedentary lifestyle, but they still have significant limitations. Previous studies have drawn a link among social media usage activities and a sedentary lifestyle in adolescents. Most have shown that the activity of using social media is connected with low physical activity. However, these studies are general in nature and have not yet explained which social media platforms are predominantly accessed by teenagers and how each platform influences their sedentary lifestyle. Each platform has different usage characteristics (Mahmudah & Rahayu, 2020), which can lead to different levels of sedentary activity. To further reviews the links between

the most frequently used social media platforms accessed and a specific sedentary lifestyle, a research location with a population characteristic of teenagers with high social media access is needed.

West Java is one of the provinces with the largest population in Indonesia and also a region with a high internet penetration rate. According to APJII, the percentage of West Java residents connected to the internet in January 2023 was 82.73% (APJII, 2023). An estimated 16.4 million social media users are in West Java (Berita Kilas Bandung, 2025). This indicates the high level of access to social media by the public, including teenagers. According to the APJII report released in 2024, social media users are more prevalent in urban environments compared to rural environments (Apjii, 2024).

Bandung City, the city which is the capital of West Java and is ranked third as the largest metropolitan area in Indonesia, after Jakarta and Surabaya (Bandung.go.id, 2020), ranks fourth in terms of internet usage, at around 84.39% (Diskominfo, 2024). Ninety-seven percent of residents use mobile phones as their primary means of accessing the internet, and 77.76% of these accesses are for social media (Diskominfo, 2024). In Bandung, 45% of teenagers were recorded as using the internet for more than six hours a day, primarily for entertainment, not for learning (Hendriyana, 2023). These characteristics indicate that Bandung City is a highly relevant area for researching the relationship between the use of social media and a sedentary lifestyle, particularly among teenagers.

This research will focus on JHS students, average age is 13-16 years (Tri Suratmi et al., 2021). Based on age classifications according to the WHO and the Ministry of Communication and Information Technology (Kominfo), junior high school students are among the age group with the highest social media users, and 81% not meeting the recommended daily physical activity standards (Kominfo, 2020; WHO, 2024). Therefore, early education is crucial to prevent the development of inactive habits that impact long-term health.

Based on a preliminary study conducted by the Bandung City Education Office, there are 75 public junior high schools and 192 private junior high schools. Based on this preliminary study, the junior high school with the largest student population in Bandung City is SMPN x Bandung City, with a total of 1,177 students and located approximately X km from the center of Bandung (0 km – Jl. Asia Afrika). SMPN X Kota Bandung was chosen because the majority of its students are known to have access to digital devices and are active social media users. This is the basis for selecting the research location to examine the relationship between the dominant social media platforms accessed and the sedentary lifestyle of adolescents.

## **Objective**

This study aims to examine the relationship between the most frequently used social media platforms and the level of sedentary lifestyle in adolescents at SMPN X Bandung City, and to determine the platforms that have the greatest influence based on the results of multiple linear regression analysis.

## **Method**

### ***Design and setting***

This study adopted a quantitative correlational design based on a cross-sectional approach to test the relationship between the dominant social media platforms accessed and the level of sedentary lifestyle in adolescents. The instruments used included a self-report questionnaire of the dominant social media platforms and the Adolescent Sedentary Activity Questionnaire (ASAQ) distributed via Google Form. The study was conducted at SMPN X

Bandung City, with students characterized by widespread use of digital devices and active use of social media.

### ***Population and sampling***

The population of this study was all students attending SMPN X Bandung City in grades VII, VIII, and IX who met the study's characteristics. Inclusion criteria included active students aged 13–16, using at least one social media platform, willing to participate, and obtaining parental or guardian approval through an informed consent form. Exclusion criteria included students who were absent or ill at the time of data collection.

The total population of the study was 1,177 students, consisting of 396 students in grade VII, 394 students in grade VIII, and 387 students in grade IX. Referring to the results of determining the sample size table of Isaac and Michael with a 5% error rate, the number of samples required was 270 respondents. After an adjustment of 5%, the number of samples increased to 284 respondents, which were then used as the total sample of the study.

The sampling technique used proportionate random sampling, which randomly selects samples proportionally according to the number of students at each grade level. The randomization process was carried out using the spin method through the Wheel of Names Spinner application, so that each student has an equal chance of being selected. The sample distribution for each grade level was 96 students in grade VII, 95 students in grade VIII, and 93 students in grade IX, which was then further adjusted per grade according to the proportion of the subpopulation.

### ***Instrument and measurement***

The research instrument consisted of two measuring instruments. The level of sedentary lifestyle was measured using the ASAQ, a questionnaire developed by Hardy, Booth, and Okely (2007) and adapted into Indonesian by Pramudita & Nadhiroh (2017). This instrument has a Cronbach's Alpha reliability of 0.699 and assesses sedentary behavior across five activity domains. The ASAQ records the amount of time spent in sedentary activities on weekdays and weekends in hours and minutes over the course of a full week. The average daily duration was then calculated to determine the level of sedentary lifestyle, with <5 hours per day categorized as low and >5 hours per day as high.

Social media platform measurement was conducted using a self-report questionnaire developed by the researchers, consisting of five questions regarding daily social media usage patterns. Respondents were asked to rank the social media platforms they used by daily usage duration and to provide an estimate of the average daily time spent on each platform. The duration of platform usage with the highest time was determined as the primary value of the study, so this variable was measured using a ratio scale because it is a unit of time with absolute value and a meaningful zero point. The other four questions provided additional information to describe social media usage patterns. All instruments were administered directly via Google Forms.

### ***Data collection and analysis***

Data were collected directly at SMPN X Bandung City using an electronic Google Form questionnaire containing two instruments: the Adolescent Sedentary Activity Questionnaire (ASAQ) to measure sedentary lifestyle and a self-report questionnaire to assess the duration of social media platform use. Prior to data collection, researchers obtained official permission from relevant agencies and informed consent from participants' parents or guardians.

Respondents were then explained the purpose of the study and how to complete the questionnaire, which was then completed independently in class. A total of 284 students in grades VII, VIII, and IX participated using a proportionate random sampling technique.

The data collected through the Google Form was exported in CSV format, then subjected to editing, coding, tabulation, and entry before being analyzed using JASP software version 0.19.3. Univariate analysis was conducted to describe the frequency distribution of each variable, including respondent characteristics, social media platforms used, and levels of sedentary lifestyle. Bivariate analysis was conducted using multiple linear regression to test the effect of duration of use of several social media platforms (ratio scale) on the level of sedentary lifestyle (ordinal scale) with a significance level of  $\alpha = 0.05$ . The results of the analysis are presented in the form of regression coefficients, significance values, and the strength of influence of each platform.

## Result

Table 1. Respondent Characteristics (n=284)

Respondent characteristics	Male		Female		Total	
	f	%	f	%	f	%
<b>Gender</b>	128	45.07	156	54.93	284	100.00
<b>Age</b>						
<b>13</b>	55	42.97	74	47.44	129	45.42
<b>14</b>	62	48.44	60	38.46	122	42.96
<b>15</b>	11	8.59	21	13.46	32	11.27
<b>16</b>	0	0.00	1	0.64	1	0.35
<b>Class</b>						
<b>VII</b>	41	32.03	55	35.26	96	33.80
<b>VIII</b>	41	32.03	54	34.62	95	33.45
<b>IX</b>	46	35.94	47	30.13	93	32.75

Based on Table 1, most respondents (54.93%) were female. In terms of age, most respondents (45.42%) were 13 years old. Meanwhile, based on grade level, a small portion of respondents (33.80%) were from grade VII.

Table 2. Frequency Distribution of Social Media Platforms Owned (n=1136)

Platform	f	%
Tiktok	254	22.36
Instagram	258	22.71
Youtube	236	20.77
WhatsApp	284	25.00
Facebook	41	3.61
Twitter	41	3.61
Onother	22	1.94

Based on Table 2, a small portion of respondents (25.00%) own and use WhatsApp as their preferred social media platform. The percentages in the table are calculated based on the total number of responses (n=1136), using the formula  $f \div 1136 \times 100$ , so that the sum of all categories adds up to 100%. This question is a multiple-response question, where one respondent can select more than one platform. Thus, although the number of respondents is 284, the total number of responses increases to 1136, and n in the table represents the total number of choices.

Table 3. Frequency Distribution of the Most Popular Social Media Platforms Accessed (n=284)

Platform	f	%
Instagram	42	14.78
Tiktok	193	67.96
WhatsApp	31	10.92
Youtube	18	6.33

Based on Table 3, the majority of respondents (67.96%) made TikTok the social media platform they most dominantly access.

Table 4. Frequency Distribution of Purposes for Social Media Use (n=904)

Purpose	f	%
For entertainment	280	30.97
To follow trends	87	9.62
For communication	238	26.33
To create content	63	6.97
For learning	236	26.11

Based on Table 4, a small proportion of respondents (30.97%) use social media primarily for entertainment. The percentages in the table are calculated based on the total number of answers ( $n = 904$ ) using the formula  $f \div 904 \times 100$ , so that the accumulation of all categories is 100%. This question is multiple response, so one respondent can choose more than one purpose for using social media. Although the number of respondents was 284 students, the total number of answers increased to 904, so  $n$  in the table represents the total number of choices, not the number of respondents.

Table 5. Frequency Distribution of Leisure Time Activities (n=284) and Positions When Using Social Media (n=526)

Behavior When Using Social Media		f	%
Filling Free Time by Accessing Social Media	Yes	262	92.25%
	No	22	7.75%
Body Position	Sitting relaxed	249	47.34%
	Lying down	184	35.02%
	Doing other activities	93	17.68%

Based on Table 5, almost all respondents (92.25%) use social media as part of their leisure time activities. In addition, some respondents (47.34%) use social media while sitting relaxed. The percentage in the body position table is calculated based on the total answers ( $n = 526$ ) using the formula  $f \div 526 \times 100$ , so that the accumulation of all categories is 100%. This body position question is multiple response, so one respondent can choose more than one body position. Therefore, although the number of respondents is 284 students, the total answers increase to 526, and  $n$  in the table represents the total number of choices, not the number of respondents.

Table 6. Sedentary lifestyle categories (n=284)

Sedentary Lifestyle	Categories	Gender				Total	
		Male		Female		f	%
		f	%	f	%		
	High	82	64.07	101	64.74	183	64.44
	Medium	45	35.15	51	32.69	96	33.80
	Low	1	0.78	4	2.57	5	1.76

Sedentary lifestyle was measured using the ASAQ categories and body posture habits when using social media. Based on Table 4.6, the majority of respondents (64.44%) were in the high sedentary lifestyle category.

Table 7. Results of Linear Regression Analysis between Social Media Platforms and Sedentary Lifestyle

independent variables	Dependent (sedentary lifestyle)					
	B	SE	$\beta$	t	p-value	95% CI (Lower-Upper)
Tiktok	0.145	0.019	0.424	7.612	<.001	0.107- 0.182
Instagram	0.042	0.024	0.096	1.753	0.081	-0.005-0.089
WhatsApp	0.003	0.036	0.005	0.092	0.927	-0.067-0.074
Youtube	0.088	0.031	0.157	2.823	0.005	0.027- 0.150
R	0.442					
R <sup>2</sup>	0.196					
Adjusted R <sup>2</sup>	0.184					
F (df1, df2)	16.954					
Sig. (p-value)	<0.001					

A linear regression analysis was conducted to determine the relationship between the dominant social media platform accessed and adolescents' sedentary lifestyle levels. The model fit test results showed that the model with social media platform as a predictor was significant overall, as indicated by an F-value of 16.954 with  $p < 0.001$ . This indicates that the model including four social media platforms (TikTok, Instagram, WhatsApp, and YouTube) was statistically more effective in explaining variation in sedentary lifestyle compared to the model without predictors. The  $R^2$  value of 0.196 indicates that 19.6% of the variation in sedentary lifestyle scores can be explained by the combination of the four social media platforms.

Parameter estimation results indicate that TikTok has the strongest and most significant influence on sedentary lifestyle. The TikTok regression coefficient of 0.145 with  $p < 0.001$  indicates that the more dominant TikTok use is, the higher the level of sedentary lifestyle among adolescents, and TikTok is the most contributing predictor in the model. Instagram had a coefficient of 0.042 with  $p = 0.081$ , indicating no significant effect in explaining sedentary lifestyle. WhatsApp also had no significant effect, with a coefficient of 0.003 and  $p = 0.927$ . On the other hand, YouTube showed a significant effect, with a coefficient of 0.088 and  $p = 0.005$ , indicating that dominant YouTube use contributes to an increase in sedentary lifestyle, although its effect remains lower than that of TikTok.

Overall, the regression results indicate a significant relationship between the dominant social media platform accessed and the level of sedentary lifestyle among adolescents. Of the

four platforms analyzed, TikTok and YouTube proved to have a significant effect, while Instagram and WhatsApp did not contribute significantly to this model.

## Discussion

Based on the results of a linear regression analysis conducted using JASP in a study titled "The Relationship Between the Most Popular Social Media Platforms Accessed and Sedentary Lifestyle," the regression model, which included four social media platforms: TikTok, Instagram, WhatsApp, and YouTube, showed statistically significant results. This is indicated by an F-value of 16.954 with a p-value  $<0.001$ , indicating that all four platforms simultaneously explained variations in sedentary lifestyle among adolescents. The R-value of 0.441 and  $R^2$  of 0.196 indicate that approximately 19.6% of the variation in sedentary lifestyle can be explained by social media use, while the remaining 80.4% is influenced by factors outside the research model. The adjusted  $R^2$  value of 0.184 confirms that the model is quite stable and has an adequate fit after considering the number of predictors.

The coefficient analysis results indicate that among the four social media platforms tested, only TikTok and YouTube have a significant influence on sedentary lifestyle. TikTok usage had the largest and most significant impact with a p-value  $<0.001$ , indicating that the more frequently adolescents access TikTok, the higher their tendency to engage in sedentary behavior. TikTok is a short-form video platform with an infinite scrolling mechanism, a personalized feed, and content designed for rapid and continuous consumption (Koç, 2023). This finding is also supported by research by Zhao & Kou (2024), which found that short-form video addiction has a significant negative effect on physical activity in adolescents. Research by Meinhardt et al. (2025) states that infinite scrolling on social media platforms encourages user engagement in sessions much longer than intended because the UI design eliminates natural stopping points, making it difficult for users to spontaneously stop watching/scrolling. This pattern encourages adolescents to continue passively watching content for long periods, often while sitting or lying down. According to the researchers, TikTok's strong influence on sedentary lifestyle is likely due to the platform's characteristics, which are designed to retain users' attention for as long as possible. The infinite scrolling system and personalized content keep teenagers exposed to a continuous stream of videos, leading them to remain in a sitting or lying position for long periods without realizing it. This usage pattern diverts physical activity from passive digital content consumption. Furthermore, the fast-paced entertainment offered by TikTok perfectly aligns with teenagers' preferences for short, engaging, and easily accessible content, reinforcing their tendency to maintain sedentary behavior. Therefore, researchers believe that the platform's highly addictive algorithmic design and mechanisms directly contribute to the increasing sedentary lifestyle among teenage TikTok users.

Besides TikTok, YouTube also had a significant impact ( $p = 0.005$ ). YouTube is known for providing long-form content (Wardhana, 2021), which can increase sedentary time, especially when consumed passively. This aligns with Zhan et al.'s (2022) finding that long-form videos tend to generate more watch time, leading the system to recommend long-form videos and increasing users' screen time. According to the researchers, YouTube's significant impact on sedentary lifestyles may be due to its passive and long-form content consumption patterns. When teenagers watch videos for extended periods, they typically remain seated or lying down, reducing physical activity. Furthermore, the autoplay feature and algorithmic recommendations that continually present videos tailored to their interests make it difficult for users to spontaneously stop watching. Therefore, although YouTube lacks the fast-paced



and intense video format of TikTok, the platform still encourages sedentary behavior due to its long usage time and high level of passive user engagement.

Unlike TikTok and YouTube, Instagram and WhatsApp did not show a significant impact on sedentary lifestyles. Instagram had a p-value of 0.081, while WhatsApp had a p-value of 0.927, indicating that use of both platforms did not predict increased sedentary behavior. WhatsApp itself differs from passive content-based platforms in that it focuses more on active communication, such as exchanging messages, engaging in group discussions, or coordinating activities (L. Agustina & Wibowo, 2022). Therefore, activities on WhatsApp generally do not require long usage times, as users access the application only when they need to send or reply to messages, thus not significantly increasing sitting time. This is in line with research by Amalia et al. (2023), which states that messaging social media platforms like WhatsApp and similar platforms have episodic usage patterns and short durations for communication, in contrast to consuming long-form video content, which can potentially increase sitting time and reduce physical activity. Instagram usage patterns also vary more widely, including viewing photos, opening stories, uploading content, and interacting via messages. These activities are not entirely passive or require prolonged use (Kusumawati & Wicaksono, 2023). This is reinforced by the findings of Balqis et al. (2021), who studied 479 Instagram users and found that although the intensity of Instagram use can trigger fear of missing out (FoMO), which was initially negatively related to physical activity, the relationship became insignificant when self-control factors were taken into account. This means that even though adolescents frequently use Instagram, they still have a tendency to maintain physical activity if they have good self-control. Thus, Instagram use does not always result in sedentary behavior because many of the activities in it allow for breaks and do not require users to remain in a sitting position for long periods. This is in line with research by Firdaus et al. (2022), which stated that the majority of respondents use Instagram with low frequency and the results showed no significant relationship between Instagram use and physical activity. This is reinforced by Nabila's statement in 2020, which states that the duration of Instagram use has no significant relationship with a sedentary lifestyle.

According to researchers, the insignificant effect of Instagram and WhatsApp on sedentary lifestyle can be explained by the usage patterns of both platforms, which involve more activity breaks than TikTok and YouTube. On WhatsApp, usage generally occurs for communication purposes, such as responding to messages, reading short information, or coordinating tasks. These activities are short and intermittent. After a message is sent or read, users tend to immediately stop using the app and return to other activities. This pattern creates an intermittent usage pattern that does not extend to prolonged sitting time. Meanwhile, on Instagram, although it has visual consumption features like feeds and stories, its activities also include active interactions such as replying to DMs, leaving comments, or creating content. These activities require more frequent body position shifts and decision-making, preventing users from getting trapped in a single, long session of use, as is the case with watching videos continuously. Therefore, researchers argue that although Instagram and WhatsApp are popular and frequently used apps by teenagers, their usage characteristics actually create more breakpoints. This is why usage of these two platforms is insufficient to significantly increase sedentary time, unlike TikTok and YouTube, whose algorithms and interface designs are designed to maintain attention for long periods. Although no specific study has addressed the relationship between the dominant social media platform accessed and a sedentary lifestyle, several previous studies have examined social media use and sedentary behavior. Research by Etika et al. (2024) found that the more and more frequently

a person uses social media, the higher the likelihood of sedentary behavior. This suggests that intense social media use tends to encourage prolonged passive activity. Furthermore, Lestari, A.W., & Afandi, D. (2022) also confirmed that prolonged social media use is associated with increased sedentary behavior. This study emphasized that the longer a person uses social media in their daily activities, the greater their likelihood of engaging in prolonged sitting or lying down.

Based on the results of this study, the researchers concluded that not all social media platforms contribute equally to sedentary behavior in adolescents. TikTok emerged as the platform with the most significant influence, followed by YouTube, while Instagram and WhatsApp showed no significant impact. This confirms that the design characteristics and interaction mechanisms on digital platforms significantly determine the level of passive user engagement. Continuous, long-form video-based content platforms tend to encourage teens to remain in a sitting or lying position for extended periods, while episodic communication or social interaction platforms provide natural breaks that reduce the likelihood of sedentary behavior.

### ***Restate the Key Findings***

This study found a significant relationship between the most frequently accessed social media platforms and the level of sedentary lifestyle among junior high school adolescents. The linear regression analysis showed a simultaneous significant regression model ( $p < 0.001$ ), with an  $R^2$  value of 0.196, meaning that 19.6% of the variation in sedentary lifestyle can be explained by social media platform use.

Furthermore, the coefficient analysis showed that only TikTok and YouTube platforms had a significant influence on increasing sedentary lifestyle. TikTok had the largest influence ( $p < 0.001$ ), followed by YouTube ( $p = 0.005$ ). Meanwhile, Instagram and WhatsApp did not show a significant effect, indicating that the use of these two platforms cannot directly predict the level of sedentary lifestyle in adolescents.

### ***Interpret the Results***

The findings of this study indicate that the dominant use of certain social media platforms may be a contributing factor to increased sedentary behavior among adolescents. Platforms like TikTok, Instagram, and YouTube are characterized by scrolling-based content, short-form videos, and high engagement loops, which psychologically encourage users to spend longer in front of the screen. Within the context of Bandura's Social Cognitive Theory, adolescent sedentary behavior is influenced by a reciprocal interaction between personal factors (e.g., entertainment motives, content preferences), environmental factors (social media culture among peers), and behavioral factors (duration of social media use as a primary passive activity).

This prolonged usage reduces opportunities for adolescents to engage in physical activity. This aligns with the global phenomenon where adolescents tend to spend a significant amount of time engaging in passive activities that require minimal energy expenditure. The practical consequences are an increased risk of health problems such as obesity, decreased physical fitness, musculoskeletal disorders, and psychological disorders.

Beyond health aspects, this study illustrates that social media has become an integral part of urban adolescent life, particularly in areas with high internet penetration like Bandung. Schools and parents need to understand that the platforms teenagers access most frequently can trigger persistent sedentary patterns. Therefore, education and support are needed so

that teenagers can manage the duration of device use in a way that balances with daily physical activity.

The results of this study support the findings of Amalia et al. (2023), who reported that increased social media use is associated with decreased physical activity in adolescents. Research by Lusianawati et al. (2023) also found that adolescents spend an average of 3.5 hours per day using social media, and only a small proportion meet the recommended daily physical activity levels consistent with the high sedentary levels among adolescents at SMPN X Bandung City.

Research by Etika et al. (2024) showed that the more platforms adolescents have, the higher the tendency for sedentary behavior. These results are consistent with your research, which found a relationship between the dominance of certain platforms and the level of sedentary lifestyle, particularly on platforms that create a "continuous scrolling" experience.

Research by Aulia & Rosidin (2024) and Rahma et al. (2025) also showed that the activity most frequently causing sedentary behavior in adolescents is device use, including gaming and social media. However, most previous studies did not identify which social media platforms most contribute to sedentary behavior.

The findings of this study provide added value by demonstrating that each platform has distinct usage patterns that can specifically influence levels of sedentary lifestyle. Thus, this study strengthens empirical evidence that social media use is a significant factor influencing sedentary lifestyles in adolescents, while also filling a research gap by analyzing the influence of the dominant platforms used in adolescents' daily lives.

### ***Implications***

The results of this study provide important implications: the type of social media platform predominantly used by adolescents can influence their sedentary lifestyle. Although the strength of the relationship found is weak to moderate, these findings still suggest that the characteristics of each platform play a role in shaping device usage patterns that can increase sedentary behavior. Platforms like TikTok, which feature short, auto-scrolling videos, have been shown to increase adolescents' likelihood of being in a higher sedentary category. This suggests that efforts to prevent sedentary lifestyles should not simply focus on reducing total device usage time but must also consider the type of platform used and its content mechanisms that can encourage prolonged sedentary behavior.

This implication emphasizes the need for more specific and targeted education regarding social media use, particularly on platforms with high visual appeal and continuous content consumption features. Such education should include awareness of how each platform's usage patterns can impact adolescents' daily physical activity and how they can independently set limits on their use.

This study also highlights the importance of implementing screen time management as a practical strategy to limit the duration of high-risk apps like TikTok and YouTube. Built-in features on Android and iOS devices, such as App Timer, Daily Limit, Focus Mode, Digital Wellbeing, and Bedtime Mode, can be used by teens to control app usage without having to completely remove access. Furthermore, the Parental Controls feature can be used by parents to help regulate teens' digital habits in a proportionate manner, rather than outright prohibiting them. These screen time settings not only help reduce prolonged sitting time but also have the potential to foster healthier and more regular social media usage patterns.

Therefore, the findings of this study can provide a basis for schools, health professionals, and parents to develop more effective preventive strategies to reduce

sedentary lifestyles in adolescents. An approach that combines targeted education and the use of technology to control device use has the potential to positively impact the balance between physical and digital activity in adolescents.

### ***Limitations***

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design only describes the relationship between variables at a specific point in time, making it impossible to conclude a causal relationship between social media platform use and sedentary lifestyle levels. Second, the measurement of both main variables relied on self-report instruments: the ASAQ for sedentary lifestyle and a questionnaire for social media usage duration. Self-report instruments have the potential to introduce recall bias and social desirability bias, thus, the accuracy of social media usage duration and daily sedentary activity may not be entirely precise. Third, data were collected via Google Forms and completed in a classroom setting under researcher supervision. While this helped ensure completeness of the questionnaire, it could have affected respondents' comfort in answering honestly, particularly regarding gadget usage habits.

### ***Suggest Future Research***

Based on the research findings showing that TikTok and YouTube have a significant influence on sedentary lifestyles in adolescents, and considering the limitations of the cross-sectional design, the use of self-report instruments, and the limited study locations, future research needs to develop a more comprehensive approach. First, future research could employ a longitudinal design to integrate changes in the duration of social media platform use and sedentary lifestyles over time. This approach would provide a deeper understanding of the dynamic patterns of relationships and allow for stronger interpretations of the possible causal relationship between specific platform use and increased sedentary behavior.

Furthermore, given the potential for bias in the use of self-report instruments, future research is recommended to utilize objective measurement methods such as screen time tracker apps, digital wellbeing tools, or wearable devices that can directly record the duration of physical activity and sedentary behavior. Using objective methods not only improves data accuracy but also allows for more detailed analysis of the intensity of specific platform use, such as scrolling patterns, types of content consumed, or the time of day.

Furthermore, because this study was conducted in a single school, further research could expand the population to various educational contexts—for example, private schools, religious schools, suburban or rural areas, and schools with different device policies. This approach is important to determine whether the effects of TikTok and YouTube on sedentary lifestyles are consistent across different populations, or whether they exhibit variations. Comparative research across regions or school types could also reveal new insights into environmental factors, school culture, or digital access that may moderate the relationship between social media use and sedentary lifestyles.

Finally, further research could incorporate additional variables not addressed in this study, such as weekly physical activity levels, sleep quality, family support, device use regulations, and adolescent mental health. These variables have the potential to provide a broader picture of the factors influencing sedentary lifestyles. By expanding the scope of analysis and measurement methods, further research could foster richer scientific discussions and significantly contribute to development of targeted interventions to reduce sedentary behavior in adolescents.

## **Conclusion**

The study found that adolescents at SMPN X Bandung City predominantly use TikTok, Instagram, WhatsApp, and YouTube, with TikTok and YouTube being the most frequently accessed platforms; most adolescents exhibit moderate to high levels of sedentary lifestyle characterized by prolonged passive activities, and statistical analysis demonstrated a significant relationship between the most popular social media platforms accessed and sedentary lifestyle ( $F = 16.954$ ;  $p < .001$ ), where social media platforms accounted for 19.6% of the variance ( $R^2 = 0.196$ ), with TikTok ( $p < .001$ ) and YouTube ( $p = .005$ ) identified as the dominant platforms significantly increasing sedentary behavior, while Instagram and WhatsApp showed no significant influence, thus confirming that the general objective of the study was successfully achieved.

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## **Author Contribution**

The author is responsible for the entire research process, including research design, instrument development, data collection, data processing, statistical analysis, interpretation of results, and manuscript writing. The supervisor provides guidance, academic supervision, instrument validation, and manuscript review at each stage of the research to ensure scientific quality and methodological appropriateness.

## **Conflict of Interest**

The author declares that he has no conflict of interest, whether financial, professional, or personal, that could influence the results of this research.

## **Ethical Clearance**

This research has obtained ethical approval from the Ethics Committee of Ngudi Waluyo University and was carried out in accordance with the principles of research ethics, including obtaining written informed consent from the parents or guardians of the participants.

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