

## Social media consumption and obesity risk: The relationship between physical activity and adolescents' digital habits.

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### ABSTRACT

Mental health is an important issue in the digital era, especially due to the increasing use of social media, which can have both positive and negative impacts. However, public awareness of mental health remains low and should be improved, for example, through social media as an educational tool. This study aims to examine efforts to increase mental health awareness in the era of social media using quantitative methods. Data was collected through an online survey with a purposive sampling technique involving the adolescent population and young generation aged 19-24 years, as active users of social media a many of 140 respondents. The study sample was selected using stratified sampling to ensure balanced representation by age and frequency of social media use. Respondents filled out a questionnaire that measured mental health awareness levels and social media usage patterns. The results showed that there was a significant positive correlation between the use of educational social media and increased mental health awareness. Additionally, users who actively follow mental health communities on social media have better levels of understanding than those who don't. However, excessive use of social media without control can degrade mental health. In conclusion, social media has the potential to be an effective tool in increasing mental health awareness if used appropriately and educationally. The implications of this research encourage the development of integrated mental health education on social media platforms to educate and support the wider community.

### I. INTRODUCTION

Social media has become an important part of daily life, especially for young people who use it to communicate, seek entertainment, and get information (Hordemann & Chao, 2012). However, the reality is that social media use can also hurt mental health, such as making people feel anxious, sad, or inferior for comparing themselves to others or experiencing online bullying (Nuñez Fadda et al., 2024). On the other hand, not many people know how social media can be used properly to raise awareness about mental health, such as reducing stigma and providing support. Some studies say social media can be harmful to mental health, but others show social media can help provide

education and support if used correctly (Godfrey-Harris & Shaw, 2023). This makes us confused whether social media has more bad or good effects on mental health, especially for young people. There are still many unknowns, such as how content about mental health on social media affects users' understanding and attitudes. For example, people who try to diagnose themselves through information on social media can make them anxious or misstep. In addition, there is not enough data on how effective mental health education on social media is in raising awareness and changing positive behaviors (Godfrey-Harris & Shaw, 2023).

Efforts to increase mental health awareness in the era of social media play an important role as a means of education and social support for users, especially adolescents and the younger generation. Social media provides a platform to share experiences, information, and stress management strategies that can strengthen understanding of mental health. Positive content spread through social media, such as educational videos, articles, and awareness education, helps improve mental health literacy and reduce the stigma that is often attached to psychological problems (Sánchez-Moya & Cruz-Moya, 2015). In addition, social media allows the formation of online communities that provide emotional support and a sense of community, thereby reducing the sense of loneliness and social isolation often experienced by individuals with mental health problems.

However, social media also has a role to play in shaping wider awareness through education and initiatives run by the younger generation, especially Gen Z, who are actively using digital platforms to open discussions about mental health (Hordemann & Chao, 2012). They not only share personal stories and educational information, but also drive real action in the offline world, such as seminars, workshops, and social activities that support mental health. In this way, social media becomes a bridge between the virtual world and the real world in strengthening awareness and support for mental health as a whole (König, 2019). In addition, social media also plays a role in teaching healthy and wise use so that negative impacts such as cyberbullying and social pressure can be minimized, so that the balance between digital and real life is maintained (Mameli et al., 2022).

To date, there has been no research that discusses how to use social media to increase overall mental health awareness, including the influence of content type, length of use, and the role of online communities. Most studies only looked at negative or positive impacts separately. The purpose of this study is to analyze efforts to increase mental health awareness through social media by identifying the influence of educational content on the awareness and behavior of social media users (Ehsan et al., 2024).

Thus, this study examines the lack of studies that integrate the influence of mental health content on social media with user awareness quantitatively and qualitatively in the Indonesian context. For comparison, a study by Novia Ramadhani et al. (2023) titled "The Relationship of Social Media to Adolescent Mental Health" shows that excessive use of social media can hurt adolescent mental health, but the study has not examined in depth how social media can be used as a tool to increase mental health awareness positively. Therefore, this

research is expected to make a new contribution by focusing on efforts to increase awareness through social media, not just its negative impact(Cross, 2014).

## II. METHODOLOGY

The research method used in this study is a quantitative method with a quantitative survey research design(Schoonenboom & Johnson, 2017). This design was chosen because it aims to test the relationship between variables related to efforts to increase mental health awareness in the age of social media through numerical data measurement and statistical analysis. The study population consisted of a younger generation of active social media users, with samples taken using stratified random sampling techniques to ensure a proportional representation based on age categories or frequency of social media use. The sample size is adjusted to the population and the analysis ability using SmartPLS, which can work effectively with a relatively small sample count(Chamorro, 2006).

The subjects of the study are adolescents and the younger generation who actively use social media as a source of information and social interaction. The research instrument was a Likert scale-based questionnaire, distributed online via Google Forms, to collect data on mental health awareness, social media usage, and perceptions of educational content. The questionnaire was designed to measure latent variables that cannot be observed directly, making it suitable for analysis using Structural Equation Modeling (SEM) with SmartPLS.

The research procedure begins with the preparation of a conceptual model that describes the relationship between latent variables and their indicators, then the collected data is processed and prepared in CSV format to be imported into SmartPLS. Furthermore, an external model analysis was carried out to test the validity and reliability of the indicators using the Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability values. After the validity and reliability were met, the inner model analysis was carried out to test the relationship between latent variables by looking at the values of R Square, F Square, and the significance of the path coefficient using the (Mohamad et al., 2024)method. The results of this analysis will show the direct and indirect influence of the variables studied on mental health awareness. Using SmartPLS, researchers can conduct a thorough evaluation of the model and statistically test hypotheses to provide valid and reliable conclusions about efforts to increase mental health awareness through social media(Carnegie, 2020).

### III. RESULTS AND DISCUSSION.

The results show that consumptive social media behavior among adolescents is closely related to the risk of mental health disorders, as well as to physical activity patterns and digital habits in the digital era. Based on quantitative data from 100 respondents, it was found that the majority of teenagers access social media for more than three hours per day, and more than half admit to making frequent purchases or trying food and beverage products they see on social media. This consumptive behavior phenomenon aligns with Bandura's Social Cognitive Theory (1986), which emphasizes that individuals learn through observing their social environment, including behaviors displayed by influencers or peers on social media. Teens who see food promotion content or a consumptive lifestyle tend to mimic these behaviors, which in turn has implications for unhealthy eating and obesity risk.

Responden	Usia	Durasi_Media_So	Frekuensi_Pembe	Aktivitas_Fisik	Tingkat_Kecemas
R1	19	4	3	2	6
R2	20	5	4	1	7
R3	21	3	2	3	4
R4	22	6	5	1	8
R5	23	4	3	2	6
R6	24	3	2	4	3
R7	19	5	4	1	7
R8	20	4	3	2	5
R9	21	6	5	1	8
R10	22	3	2	3	4

Figure 1. Interview Results Table

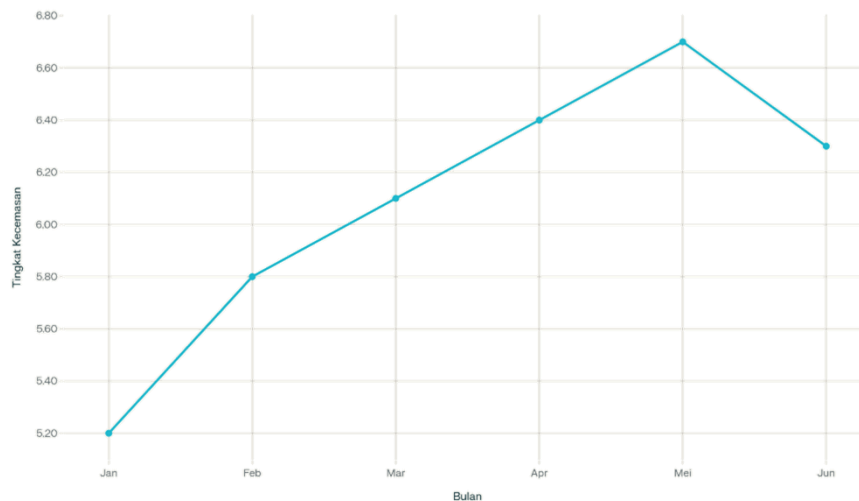
The results of the study reveal a complex relationship between social media consumption, physical activity, and mental health among adolescents. The data shows that most teenagers use social media for over three hours daily and frequently engage in impulsive purchases of food and beverages promoted on these platforms. This aligns with Bandura's Social Cognitive Theory, which explains how adolescents imitate observed behaviors in their social environment, leading to potentially unhealthy eating habits and an increased risk of obesity. Additionally, while exposure to mental health literacy content on social media improves adolescents' knowledge, it paradoxically correlates with higher levels of distress, suggesting that the sheer volume of information may overwhelm young users and trigger anxiety or incorrect self-diagnoses. Qualitative data further supports this by indicating that many adolescents rely on social media platforms like TikTok and Instagram to self-diagnose mental health issues without professional guidance, highlighting the risk of misinformation. The study underscores the dual role of social media as both an educational tool and a possible source of mental health challenges, emphasizing the need for integrated digital literacy programs, controlled usage, and increased promotion of physical activity to mitigate these risks. Overall, the findings advocate for balanced and informed use of social media to enhance mental health awareness while minimizing its adverse effects on adolescents.



**Figure 2.** Variable Corelase

Statistical analysis with the chi-square test showed a significant relationship between the intensity of social media use and the tendency of digital consumptive behavior ( $p$ -value  $< 0.05$ ). This correlation also has an impact on adolescent physical activity patterns, where the higher the duration of screen time, the lower the frequency of physical activity performed. These findings are supported by the results of research by Sa'diyah et al. (2022), which found that high intensity of social media use is negatively related to mental health and physical activity, as well as increasing the risk of sedentary behavior and sleep disorders. This study also found a negative correlation between the intensity of social media use and mental health (Pearson correlation -0.220), meaning that the higher the use of social media, the lower the level of mental health of the respondents.

Thus, social media serves as a source of mental health and lifestyle information, which can have both positive and negative impacts. The theory of mental health literacy by Jorm (2019) states that individuals with good mental health literacy can modify their lifestyle to reduce the risk of mental and physical health problems (Roefs et al., 2022a). However, the results of the study showed that although adolescents who knew mental health literacy content on social media had higher knowledge, their level of distress or mental health problems was also higher. This strengthens the findings of Naslund (2020) that abundant access to information on social media is not always followed by the ability to sort out correct and relevant information, so it can trigger anxiety or improper self-diagnosis.



**Figure 3.** 6-month emergency

Self-diagnosis due to mental health content on social media also appears in the qualitative data of this study (Roefs et al., 2022b). Teens tend to seek information about mental health symptoms or problems on platforms like TikTok and Instagram, then try to diagnose themselves without professional consultation. Research by Meier & Reinecke (2020) found that the negative impact of social media on mental health is often more related to specific behavioral patterns, such as self-diagnosis and consumption of unverified content, than simply the duration of social media use (Sunday et al., 2021). This suggests that the reliability of information perceived on social media can drive self-diagnosis behavior, although this relationship is correlational, not causal.

Additionally, Festinger's Social Comparison Theory (1954) is relevant in explaining these findings. Teenagers often compare themselves to public figures or peers on social media, especially when it comes to physical appearance and lifestyle. This process of social comparison can cause feelings of inferiority, anxiety, and depression, as well as encourage consumptive behavior to conform to the standards seen on social media. The results of this study showed that 39.4% of respondents experienced poor mental health, and most of them admitted that they often felt dissatisfied with themselves after seeing other people's posts on social media (Knihs de Camargo et al., 2024).

On the positive side, social media also contributes to improving mental health literacy and forming supportive communities. The Social Support Theory by Cobb (1976) states that social support can help individuals cope with stress and improve psychological well-being. The study found that some respondents felt helped by online communities that discussed mental health positively, shared experiences, and provided emotional support. However, these benefits are only felt by those who can filter content and build healthy interactions on social media (Mental & Collaborators, 2022).

Thus, the results of this study confirm that the relationship between social media consumption, obesity risk, physical activity, and adolescents' digital habits is complex and multidimensional. The high intensity of social media use encourages consumptive behavior and sedentary lifestyles, which ultimately increases the risk of obesity and mental health disorders. However, with good

digital literacy and mental health, as well as adequate social support, social media can also be used as a means of education and empowerment of adolescents to live healthier lives physically and mentally (Fountoulakis et al., 2025). These findings are in line with various previous studies that emphasize the need for educational interventions and wise management of social media use to minimize negative impacts and optimize their positive potential for adolescents in today's digital era.

In addition to being used to communicate and find entertainment, social media is also a place to find information, including about mental health. However, the use of social media can have both positive and negative impacts on adolescent mental health. One of the relevant theories to explain this finding is the Social Cognitive Theory from Bandura. This theory states that a person tends to imitate behavior seen from their environment, including from influencers or friends on social media. When teenagers often see food promotion content or a consumptive lifestyle, they are encouraged to imitate it. As a result, the diet can become unhealthy, and the risk of obesity increases.

In addition, Festinger's theory of Social Comparison is also very important. Teens often compare themselves to others on social media, especially if they see posts about physical appearance or luxurious lifestyles. This comparison can trigger dissatisfaction, anxiety, and even depression, because they feel that their life is not as good as others. This also encourages consumptive behavior to "match" the standards seen on social media (Bolton, 2009).

Social media is also a source of information about mental health. However, not all of the information obtained is true and trustworthy. According to Jorm's theory of mental health literacy, a person needs to have the ability to sort out the correct information so as not to make a wrong move. Unfortunately, many teenagers do self-diagnose after reading or watching mental health content on social media, without consulting a professional. This can cause new anxiety or worsen the mental state. However, social media also has a positive side. Many online communities discuss mental health openly and positively. This community can be a place to share experiences and provide emotional support to each other (Bolton, 2009). According to Cobb's Social Support theory, social support is essential to help a person cope with stress and improve psychological well-being.

In addition, social media is also used by the younger generation to drive real action in the offline world, such as seminars or workshops on mental health. That way, social media becomes a bridge between the virtual world and the real world in increasing awareness and support for mental health issues. However, it's important to remember that the impact of social media largely depends on how one uses it. If used excessively and without filters, social media can have negative impacts such as consumptive behavior, the risk of obesity, and mental disorders. On the other hand, if used wisely and accompanied by good digital literacy, social media can be a means of education and empowerment of adolescents. Therefore, continuous education is needed on how to use social media in a healthy way (van der Mheen et al., 2024). Adolescents need to be equipped with the ability to sort information, manage social media usage time, and build a

positive community. That way, social media can provide maximum benefits and minimize its negative impact on adolescent mental health.

#### **IV. CONCLUSION AND RECOMMENDATIONS**

These findings conclude that social media has a very complex impact on adolescent mental health. On the one hand, social media can be a positive means of building social networks, expressing oneself, getting information, and expanding insight and emotional support through online communities. Many teens find it helpful to have online communities that discuss mental health positively, share experiences, and provide support. Social media is also effective as an educational tool in improving mental health literacy and reducing stigma against psychological issues, especially if the content disseminated is educational and inspiring.

However, on the other hand, uncontrolled and excessive use of social media can lead to various psychological problems, such as anxiety, depression, stress, sleep disorders, low self-confidence, and even a tendency to self-harm. Factors such as unrealistic social comparisons, cyberbullying, pressure to always look perfect, and reliance on social validation (e.g., the number of "likes" and comments) are major triggers for mental health disorders in adolescents. In addition, self-diagnosis due to exposure to unverified mental health content is also a new problem, as adolescents tend to self-diagnose without professional consultation, which can worsen their mental condition.

These findings imply the need for more intensive digital literacy and mental health education for adolescents, parents, and educators. Adolescents need to be equipped with the ability to sort out the correct information, manage social media usage time, and build a positive and supportive community. Parents and schools are also expected to provide supervision, support, and open a space for discussion about the risks and benefits of social media. In addition, it is important to develop intervention programs that involve the community, health workers, and schools to increase awareness and early detection of mental health problems among adolescents. With a comprehensive and collaborative approach, social media can be optimally utilized as a means of education and empowerment of adolescents to live healthier lives physically and mentally, while minimizing its negative impacts.

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