

# The Influence of Social Media on Mental and Physical Health of Adolescent Athletes: A Systematic Review

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## ABSTRACT

**Background:** Mobiles have become an essential tool in today's world as many activities can be conducted online. According to a 2015 study, over 2,000 adolescents use mobile phones to access social media for 92% of their day. However, the excessive use of social media can have negative impacts on the mental and physical health of adolescent athletes, such as increased stress, unhealthy lifestyle habits (such as alcohol and drug use), changes in sleep patterns, and obesity. It is therefore crucial for adolescent athletes to manage their time on social media in order to maintain their mental and physical health. This study aims to explore the relationship between social media usage and the mental and physical health of adolescent athletes.

**Methods:** In this study, the researcher employed a systematic review method and selected articles using the PRISMA method. The articles were retrieved from online databases such as Google Scholar and ScienceDirect. The articles used in the study were published between 2017 and 2022 (a period of 5 years).

**Results:** Based on the five selected articles, it was found that all of them reported a correlation between social media usage and the mental and physical health of adolescent athletes.

**Conclusions:** Therefore, it can be concluded that better time management of social media usage can have a positive impact on the mental and physical health of adolescent athletes.

**Keywords:** social media; mental and physical health; adolescents athletes

## 1. Background

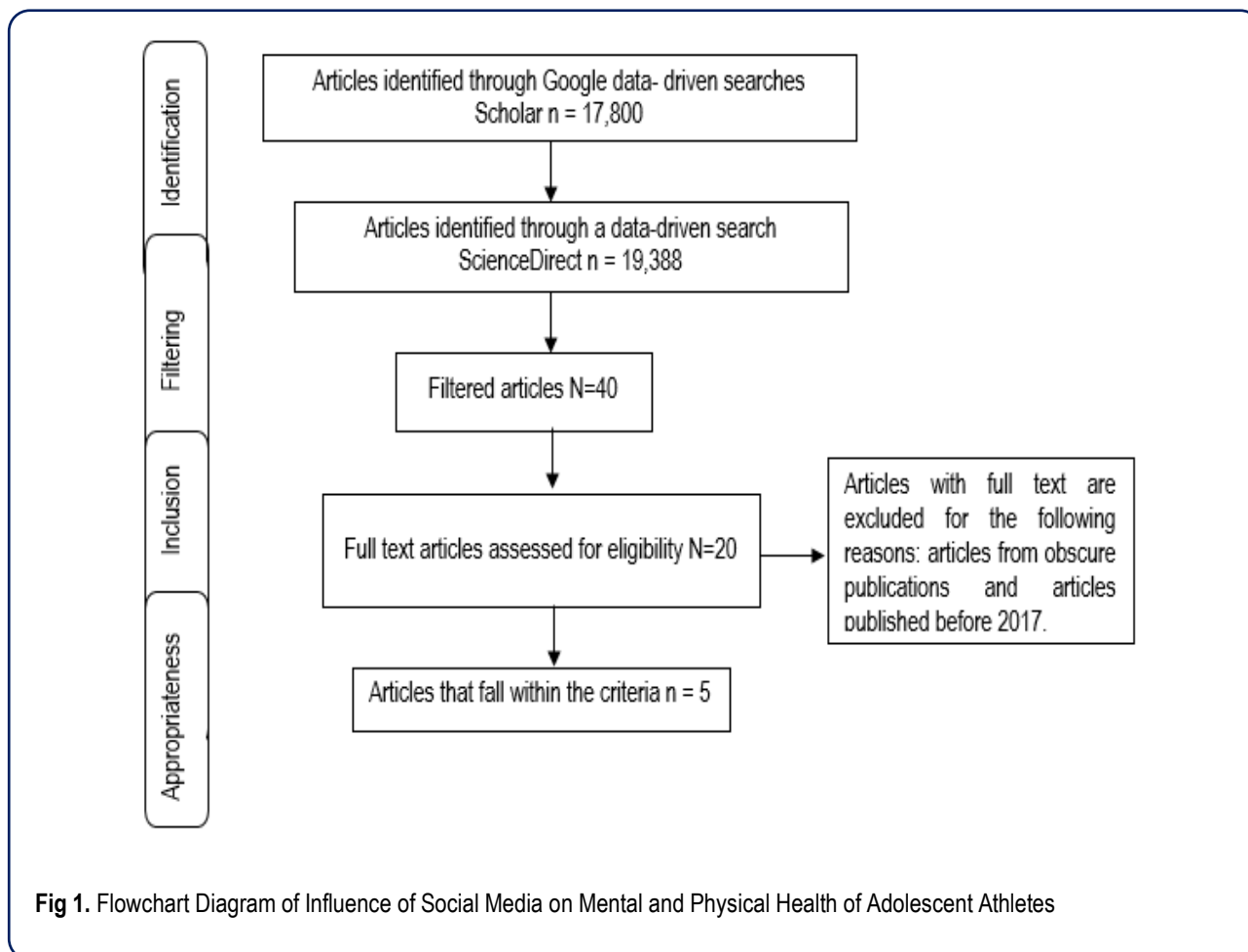
Technology has revolutionized every aspect of our lives. One field that is rapidly developing is communication (Valanju, Barani, Mautner, Hadaya, Cross, Gunawardana, Partridge, 2022). Communication is defined as a form of interaction. Its importance lies in the fact that it allows humans to meet their needs and connect with others. In the past, long-distance communication media that could be used were in the form of print media, such as newspapers and correspondence through the post office (Liu, Koire, Erdei, & Mittal, 2022). However, with technological advances in the field of social media communication, or commonly referred to as social media, information shared with the general public can be easily accepted, practical, and much more efficient (Necka, Rowland, & Evans, 2021). In addition, with globalization which is unavoidable, it is increasingly triggering humans to be able to create software that can be easily used by many people in sharing various desired information, for example Facebook, Twitter, TikTok, and Instagram which are indeed has a function to be able to share information globally (Paterson, Ramage, Moore, Riaz, Tremblay, Faulkner, 2021). The global acceptance of social media does not prevent countries from also developing software with similar concepts and integrating various social media applications into one device (Hielscher, Moores, Blenkin, Jadambaa, & Scott, 2021). Indonesia, with its large population, is a prime target for social media application developers to market their new products. According to a research study by We Are Social Hootsuite from January 2019, there were 150 million social media users in Indonesia, which is 56% of the total population, and an increase of 20% from the previous survey. Additionally, 130 million people, about 48% of the population, use social media on their gadgets.

In Indonesia, adolescents are the highest users of social media. Adolescence is a transition period from childhood to adulthood, marked by various biological, cognitive, and socio-emotional changes. The existence of these socio-emotional changes makes this period particularly sensitive as adolescents are in the stage of seeking self-identity and pleasure. This is also true for young athletes, who use social media to interact with their peers (Awang Firmansyah & Muhammad Reza Aziz Prasetya, 2021). The main function of social media is to expand social interaction and create dialogic communication among many individuals, as well as to build personal branding. As athletes, they are also students at school and excessive screen exposure can have a negative impact if not controlled properly. According to the U.S. Department of Health and Human Services (2021), the ideal duration for online activities is 257 minutes or about 4 hours 17 minutes per day. This duration allows teenagers to have a high level of technology proficiency, while still being able to socialize. However, if the usage exceeds 4 hours 17 minutes, it can negatively affect adolescent brain development. Additionally, lack of self-control and poor timing can lead to negative impacts such as disruptions to mental health, including depression caused by cyberbullying, and physical health issues such as near-sightedness, high blood pressure, low back pain, and obesity (Vande Vliet & Inglés, 2021). The high usage of social media among adolescents globally has prompted the author to conduct a study to determine the effects of social media on mental and physical health in adolescent athletes. Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

## 2. Methods

The research strategy employed in this study is a systematic review method, where data is collected by analyzing the core of each discussion from various valid scientific sources. This literature review aims to gather several scientific studies that have been published. The sources are obtained from Google Scholar and ScienceDirect, using keywords related to the influence of social media, adolescents athletes, mental health, and physical health.

The systematic review method used by the author adheres to the PRISMA (Preferred Reporting Items for Systematic Review) guidelines, which include identification, screening, inclusion, and feasibility of the articles found and then analysed (Helbach, Hoffmann, Pieper, Allers, 2022). The articles were reviewed to determine if social media has an influence on the mental and physical health of adolescents, based on the articles that meet the criteria. All relevant information found in publications related to the influence of social media on the mental and physical health of adolescents were selected and presented in a narrative form. Conclusions are drawn after the data is obtained. Additionally, the articles were selected within the last five years (2017-2022) based on the time of publication. Articles were searched both in Indonesia and internationally, as long as they were written in English.



### 3. Results

**Table 1. Analysis of elastic band exercise for elderly health**

No	Author Number, Year, Title	The place	Method	Conclusion
1	Fransiska Sabatini Setiawati, Trias Mahmudiono, Nadia Ramadhani, Khairina Fadiyah Hidayati, (2019), "Intensity Use of Social Media, Sports Habits, and Obesity in Adolescents in High School Negeri 6 Surabaya in 2019"	Surabaya, Indonesia	Cross sectional	There is a relationship between low exercise habits and the intensity of social media use in adolescents. The use of social media with high intensity in adolescents, can have a negative impact. One of them is reducing physical activity, causing metabolic imbalances in the body and can be at risk triggering obesity.
2	David S. Lee, To Jiang, Jennifer Crocker, Balwin M. Way, (2022), "Social Media	New York	Cross sectional	Social media use has been linked to indicators of poor physical health, including higher levels of CRP (a biomarker of chronic inflammation) which

No	Author Number, Year, Title	The place	Method	Conclusion
	Use and Its Link to Physical Health Indicators”			is associated with cardiovascular disease and cancer, as well as more frequent somatic symptoms such as headaches, chest or back pain.
3	Nila Zaimatus Septiana, (2021), “The Impact of Social Media Use on Mental Health and Social Welfare of Adolescents During the Covid-19 Pandemic.”	Kediri, Indonesia	Explanatory research, simple linear regression and maneuver Test	The positive impact is that adolescents can socialize, share ideas, interact socially, academically, work and receive social support, control on social media is not good, there will be a lot of losses obtained from those who its use.
4	Briidget Dibb (2019) “Social media use and perceptions of physical health	United Kingdom	Cross sectional	While social media use can have positive effects such as increased motivation and hope, it can also negatively impact physical health
5	Julius Ohrnberger, Eleonora Fichera, Matt Sutton, (2017), “The relationship between physical and mental health: A mediation analysis”.	United Kingdom	Mediation analysis	Mental and physical health are closely interconnected, and can affect an individual's lifestyle choices such as smoking, alcohol consumption, and drug use, as well as social interactions. Good mental health in the past can predict good physical health in the future

#### 4. Discussion

As seen from the various journals discussed above, there is a connection between social media, mental and physical health in adolescent athletes, which is influenced by factors such as poor time management in using social media and lack of physical activity. This can lead to negative effects on teenagers, including increased stress, unhealthy lifestyles, obesity, and insomnia caused by the overuse of social media.

Adolescents mostly use social media to stay updated on lifestyle trends. The availability of sophisticated internet-enabled gadgets makes it easy for anyone to access the internet anytime and anywhere (Precht, Stimberg, Margraf, & Brailovskaia, 2022). Research on this topic must be continuously updated as technology advances. There is a relationship between low exercise habits and the intensity of social media use in adolescents. High intensity social media use in adolescents can have negative effects, such as reducing physical activity, causing metabolic imbalances in the body, and increasing the risk of obesity (Setiawati, Mahmudiono, Ramadhani, Hidayati, 2019). There is a correlation between social media use and indicators of physical health, as shown by higher levels of CRP (a biomarker of chronic inflammation) which is associated with cardiovascular disease and cancer. Social media use can also lead to more frequent somatic symptoms such as headaches, chest or back pain (David, Jiang, Crocker, Way, 2022)

"Social media can have positive impacts for adolescents, such as socialization, idea sharing, and social, academic and professional interactions, as well as providing social support (Septiana, 2021). However, excessive use can lead to negative effects such as decreased physical health and lifestyle impacts (smoking, alcohol consumption, drug use) as well as on mental and physical health (Dibb, 2019). A balance in use and

control is important to reap the benefits while minimizing the losses. Good mental health in the past has been linked to good physical health in the future (Ohmberger, Fichera, Sutton, 2017).

### **The Effect of Social Media on Mental Health of Adolescent Athlete**

Social media has become a dominant force in disseminating news and information in society, connecting individuals through virtual networks such as Facebook, Twitter, Instagram, and other applications (Porter, Zile, Peryer, Farquhar, & Sanderson, 2021). Adolescents are among the groups of people who commonly use social media. However, the benefits of technology are accompanied by potential risks. Prolonged and passive use of social media, such as browsing other users' posts, can harm mental health, leading to feelings of envy, inadequacy, and dissatisfaction with life (Viera, Melcher, Miller, Whitfield, López, Gordon, Pagoto, 2021). The World Health Organization's Regional Director for Europe (Beeres, Andersson, Vossen, & Galanti, 2021) has reported an increase in the number of boys and girls across Europe experiencing poor mental health, low self-esteem, nervousness, or irritability, which can be attributed to various factors such as culture, economy, and the use of digital technology.

The advancement of technology has both positive and negative effects on society, including vulnerabilities and new threats such as cyberbullying. According to WHO (2020), 1 in 10 adolescents experience cyberbullying at least once in the last two months. Adolescents have reported that social media can cause mood and anxiety disorders and view it as a platform for cyberbullying, leading to stress, anxiety, loneliness, and depression (Ríssola, Aliannejadi, & Crestani, 2022). This is often due to social comparisons, where individuals evaluate and improve themselves by comparing themselves to others, but it can also lead to feelings of inadequacy when making upward comparisons with those who are perceived as better than oneself (Dibb, 2019).

Research in the United States has shown that adolescents who reported spending more time at home and accessing social media on smartphones had a higher risk of depression and suicide, compared to those who reported spending less time on screens and more time engaging in activities outside the home such as social interaction, sports, and recreation (David, Jiang, Crocker, Way, 2022). This supports the findings of Ohmberger's research, which demonstrated a relationship between mental and physical health and its impact on lifestyle and social interactions. Having good mental health in the past is also linked to having good physical health in the future (Ohmberger, Fichera, Sutton, 2017)

### **The Effect of Social Media on Physical Health of Adolescent Athlete**

Mental health problems in adolescents caused by addiction to social media can also have a negative impact on their physical health. Heavy and prolonged use of social media among young people can not only increase the risk of various mental health symptoms, but also decrease physical health. Prolonged stress, a common side effect of social media use, can lead to hypertension in adolescents, which can damage organs such as the heart and kidneys (Zhong, Huang, & Liu, 2021). In addition, excessive use of social media can also lead to more frequent somatic symptoms such as headaches, chest or back pain (Zhong, Huang, & Liu, 2021) and a lack of physical activity which can contribute to obesity (Khajeheian, 2018). Furthermore, prolonged use of smartphones to access social media can also lead to addiction and a delay in sleep, which can change sleep patterns and lead to insomnia (Beeres, Andersson, Vossen, & Galanti, 2021). Poor sleep quality at night can cause sleepiness during the day, affecting cognitive function section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

## **5. Conclusions**

Based on the results of this systematic review, there is a correlation between social media use and mental and physical health in adolescent athletes. Excessive or uncontrolled use of social media can negatively impact mental health, with adolescents who are addicted to social media often experiencing depression, stress, anxiety and feelings of loneliness. Prolonged mental disorders such as stress and depression can also affect physical health, specifically increasing the risk of hypertension. Furthermore, adolescent who are addicted to social media

tend to limit physical activity, increasing the risk of obesity or being overweight. Other physical health issues linked to social media use include eye health problems and sleep disturbances such as insomnia among adolescents.

To minimize the negative effects of social media, it is important to reduce or limit excessive use by turning off notifications while at school, eating, working, or spending time with family and friends. Prioritize spending time in real-life social interactions with family and friends over those through social media. Adolescents may find it challenging to break bad habits they have formed, but with determination and effort, they can overcome the addiction over time.

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