



Abandoned children: mediating of psychological capital on the relationship between physical activity and social media use

Niños abandonados: mediación del capital psicológico en la relación entre la actividad física y el uso de las redes sociales

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Abstract

Introduction: The third and tenth goals of the SDGs are to achieve healthy and prosperous lives (physically, mentally and socially healthy) and reduce inequality. Therefore, physical activity, social media use and psychological capital in abandoned children, because minority group that also has a place in the development goal of inequality. **Objective:** It was to determine how the use of social media and physical activity are related to abandoned children, using psychological capital as a mediating variable.

Methodology: Correlation tests and path analysis methods were used with 201 abandoned children (105 boys and 96 girls) with physical activity for abandoned children, the use of social media, the intensity of social media use and the psychological capital used were assessed. The Psychological Capital Questionnaire was used to examine the data.

Results: Children who have been abandoned participate in the category of high physical activity (50%), high use of social media (93%) and high psychological capital (88%). Social media use and physical activity have a significant substantial relationship ($\beta=0.629$, $p<0.001$). The mediation of physical activity and social media use showed that psychological capital had a positive effect ($p<0.001$).

Conclusions: Physical activity is correlated with social media use, the mediation of psychological capital also has a significant effect and can predict physical activity and social media addiction.

Keywords

Abandoned children; physical activity; psychological capital; social media use; sustainable development goals.

Resumen

Introducción: Los objetivos tercero y décimo de los ODS son lograr vidas saludables y prósperas (física, mental y socialmente sanas) y reducir la desigualdad. Por lo que la actividad física, el uso de las redes sociales y el capital psicológico en los niños abandonados, por ser un grupo minoritario que también tiene un lugar en el objetivo de desarrollo de la desigualdad. **Objetivo:** Fue determinar cómo el uso de las redes sociales la actividad física se relacionan con los niños abandonados, utilizando el capital psicológico como variable mediadora.

Metodología: Se utilizaron pruebas de correlación y métodos de análisis de ruta con 201 niños abandonados (105 niños y 96 niñas) con actividad física para niños abandonados, se evaluó el uso de las redes sociales, la intensidad del uso de las redes sociales el capital psicológico utilizado. Se utilizó el Cuestionario de Capital Psicológico para examinar los datos.

Resultados: Los niños que han sido abandonados participan en la categoría de alta actividad física (50%), alto uso de las redes sociales (93%) y alto capital psicológico (88%). El uso de las redes sociales la actividad física tienen una relación sustancial significativa ($\beta=0,629$, $p<0,001$). La mediación de la actividad física y el uso de las redes sociales mostró que el capital psicológico tuvo un efecto positivo ($p<0,001$).

Conclusiones: La actividad física está correlacionada con el uso de las redes sociales, la mediación del capital psicológico también tiene un efecto significativo y puede predecir la actividad física y la adicción a las redes sociales.

Palabras clave

Actividad física; capital psicológico; niños abandonados; objetivos de desarrollo sostenible; uso de redes sociales.

Introduction

The United Nations (UN) established the Sustainable Development Goals (SDGs) as a set of objectives to realize a better and more sustainable life. The SDGs program was launched in 2015 and is expected to be achieved by 2030, which has 17 goals to be achieved in this program. The third goal is a healthy and prosperous life, and the tenth goal is to reduce inequality. A healthy and prosperous life based on World Health Organization (WHO) is divided into three, namely psychological, physical, and social well-being. One of the goals of reducing inequality in the SDGs is to empower and promote social inclusion regardless of age, gender, disability, race, economic status, and social group. The World Bank Group defines social inclusion as a process of increasing the role of individuals to take part in society.

Abandoned children are one of the minority groups that still exist today, this group grows from victim status as compensation for the absence of sympathy and attention (Ransel, 2002), whereas it should be in accordance with goals of SDGs, human rights include the rights of children that must be protected, guaranteed, and fulfilled by families, parents, communities, governments, and countries (Timomor & Lolong, 2023). These childhoods are not only factually distinct, but also normatively and conceptually distinct (Panter-Brick & Smith, 2000). Because of this, It's critical to understand more about the development of abandoned children, because there is still a lack of research that discusses the lives of abandoned children.

No physical activity research has been found on abandoned children, previous research discussed more about physical activity more discussed in athletes (Quintero et al., 2022; Taheri et al., 2023), student in university (Kljajević et al., 2022; Luciano et al., 2021; Peñarrubia-lozano et al., 2021), teenager (Dahlgren et al., 2021), and the elderly (Parra-Rizo et al., 2022). But previous research states that in contrast to older individuals, young people such as children, students and college students are more vulnerable to leading unhealthy lives (Moscatelli et al., 2023; Sirard & Pate, 2001), such as being overweight and an unbalanced lifestyle will cause disruption to the body's metabolism (Hultgren et al., 2019). Lifestyle balance can be done one of them by doing physical activity which can be interpreted as any skeletal muscle-driven body movement that necessitates expenditure of energy that has been studied on children, students, students in university, to the elderly (Caspersen et al., 1985; Blair et al., 2001; Soares Pernambuco et al., 2012; Hollmann et al., 2007).

Research on abandoned children is mostly carried out in the psychological scope as research has been conducted by that, the psychological state of abandoned children can raise special issues (Khadija, 2021; Kovács, 2022; Escueta et al., 2014). Psychological well-being can be seen in psychological capital which discusses 4 aspects, namely optimism, hope, resilience, efficacy, and which are related to various behaviors, attitudes, and work outcomes that will be desired (Luthans et al., 2017; Luthans et al., 2007; Luthans & Youssef-Morgan, 2004; Nolzen, 2018). Although there are many studies on abandoned children in the scope of psychology, no research has been found that discusses psychological capital in abandoned children. Research on psychological capital is more widely discussed in the aspects of employees (Asbari et al., 2021; Karimi et al., 2023), athletes (Sood & Puri, 2023; Yang et al., 2023; Jannah et al., 2018), and also teachers (Clarence et al., 2021; Sukri et al., 2022).

Social well-being can be seen from sustainable well-being which consists of two important components, namely humans and the environment, which alludes to the connection between humans and the relationship between humans as well as the surroundings (Bakar et al., 2015). Past research states that the relationship between humans and the environment can be seen in social networking relationships seen in social media, which shows that social media can change the way individuals interact, think, get support from others, and improve social well-being (Valkenburg et al., 2022; Kross et al., 2021; Samad et al., 2019). Griffiths & Kuss (2017) stated that adolescents seem to have subscribed to the cultural norm of online networking which is said to be sustainable. This is in line with research conducted by (Inchley et al., 2020) that 35% of adolescents are characterized as intensive electronic media users. In this case, the use of social welfare from the perspective of social media use at this time has not been discussed in any research on abandoned children.

Based on the above background and because no research has been found that discusses physical activity, social media use, and psychological capital in abandoned children, this study aims to explore the relationship between physical activity and social media use in abandoned children by mediating the influence of psychological capital.



Method

Participants

The study's population consisted of abandoned children who lived in Gresik, East Java, Indonesia. The study's sample consists of 6–18-year-old abandoned children who fit the requirements of regulation number 4 of 2020 of the Republic of Indonesia by the Minister of Social Affairs pertaining to Basic Social Rehabilitation for Abandoned Children, namely 201 samples ($n=201$) consisting of 96 female and 105 male.

Procedure

Instrument

This study's research design employs a quantitative research method design, namely the quantitative non-experiment method. The questionnaire distribution was applied in this case, using the Global Physical Activity Questionnaire (GPAQ) physical activity instrument, social media usage instrument, and psychological capital instrument.

Global physical activity questionnaire (GPAQ)

The GPAQ instrument was developed by the World Health Organization (WHO), used to determine the results of students' physical activity by classifying them based on MET (Metabolic Equivalent), which is the metabolic rate ratio at rest, and can be in the form of kcal/kg/hour. For activities with moderate categories can be calculated by multiplying by 4 MET. For activities with high categories have a ratio of 8 times greater than sitting quietly, because this is the heavy category of physical activity multiplied by 8, with three categories, namely: high ($X \geq 3000$), moderate ($600 \geq X < 3000$), low ($X < 600$).

The following is the formula of the GPAQ instrument:

Total Physical Activity METs min/week =

$$[(P2 \times P3 \times 8) + (P5 \times P6 \times 4) + (P8 \times P9 \times 4) + (P11 \times P12 \times 8) + (P14 \times P15 \times 4)]$$

Intensity of Media Social Use (IMSU)

The social media use instrument Intensity of Media Social Use was developed by (Nafisah & Jannah, 2024), used to determine the intensity of social media use in abandoned children. There are three categories of social media use, namely: high ($X > 38$), medium ($33 > X \leq 38$), low ($X \leq 33$). Likert scale with 4 item choices (very suitable, suitable, not suitable, very not suitable), with a total of 10 question items in this instrument.

The Psychological Capital Questionnaire (PCQ)

The psychological capital questionnaire (PCQ) instrument created by (Luthans et al., 2017) is utilized to gauge four dimensions, namely hope, efficacy, resiliency, and optimism. The psychological capital categories are: high ($X > 94$), medium ($85 > X \leq 94$), low ($X \leq 85$). This instrument consists of 21 question items with a Likert scale of 5 answer options (never, rarely, sometimes, often, and very often).

Data analysis

Path analysis and the correlation test will be used to analyze the data. Finding a relationship between variables is the goal of the correlation test, and identifying a pattern of relationships between variables is the goal of path analysis, as well as to determine the direct and indirect effects between variables. To analyze the data, Jeffrey's Amazing Statistics Program (JASP) version 0.19.1.0 will be used.

Results

This study used 201 samples of abandoned children in a region, with demographic data:

Table 1. Demographic Data and Characteristics

Demographic	Category	n = 201	%
Gender	Boys	105	52%
	Girls	96	48%
Age	6-11	45	22%
	12-18	156	78%

Based on the table above, The study's total number of responders was 201 children, with the majority of respondents being male, namely 105 children (52%). Meanwhile, according to age demographics, the majority of respondents were 156 children aged 12 to 18 years (78%). More information about the outcomes of the abandoned children can be found at :

Table 2. Result of Physical Activity, Media Social Use, and Psychological Capital

Gender	Category	Physical Activity N (%)	Media Social Use N (%)	Psychological Capital N (%)
Boys	High	53 (26%)	99 (49%)	95 (47%)
	Medium	34 (17%)	4 (2%)	10 (5%)
	Low	18 (9%)	2 (1%)	2 (1%)
Girls	High	47 (24%)	88 (44%)	81 (40%)
	Medium	32 (16%)	6 (3%)	11 (5%)
	Low	17 (8%)	2 (1%)	2 (1%)

Physical activity performed by boys was in the high (n=53, 26%), medium (n=34, 17%) and low (n=18, 9%) categories. While girls' physical activity was in the high (n=47, 24%), medium (n=32, 16%), and low (n=17, 8%) categories. Boys' social media use was in the high (n=99, 49%), medium (n=4, 2%), and low (n=2, 1%) categories. Meanwhile, girls' social media use was in the high (n=88, 44%), medium (n=6, 3%), and low (n=2, 1%) categories. Psychological capital of boys is in the high (n=95, 47%), medium (n=10, 5%), and low (n=2, 1%) categories. While girls' physical activity is in the high (n=81, 40%), medium (n=11, 5%), and low (n=2, 1%) categories.

Pearson correlation analysis for ascertain connection between physical activity, social media use, and psychological capital, previously each score had been equalized using Z score.

Table 3. Pearson Correlation

Variable		Physical Activity	Media Social Use	Psychological Capital
1. Physical Activity	Pearson's r	—	—	—
	p-value	—	—	—
2. Media Social Use	Pearson's r	0.629	—	—
	p-value	< .001	—	—
3. Psychological Capital	Pearson's r	0.449	0.284	—
	p-value	< .001	< .001	—

Physical activity and social media use are significantly positively correlated, according to the correlation test results ($\beta = -0.829$, $p < 0.05$). Additionally, there is a significant correlation between psychological capital and social media use ($\beta = -0.829$, $p < 0.05$), psychological capital and physical activity ($\beta = -0.829$, $p < 0.05$). Path analysis is utilized to ascertain the direct and indirect consequences of social media use, physical activity and psychological capital health after the correlation between variables has been established.

Table 4. Direct Effects

		Estimate	Std. Error	z-value	p	Lower	Upper	
Physical Activity	→	Media Social Use	0.408	0.040	20.040	< .001	0.729	0.887

Table 5. Indirect Effects

			Estimate	Std. Error	z-value	p	Lower	Upper	
Physical Activity	→	Psychological Capital →	Media Social Use	0.221	0.012	1.795	0.003	-0.002	0.043

Table 6. Total Effects

		Estimate	Std. Error	z-value	p	Lower	Upper	
Physical Activity	→	Media Social Use	0.629	0.039	21.001	< .001	0.751	0.906



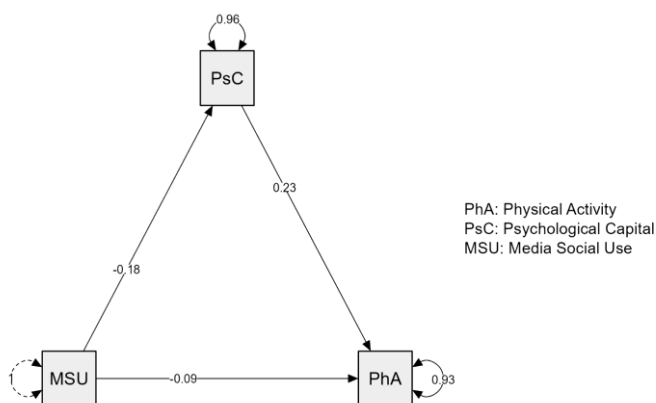
Tabel 7. Path Coefficients

		Estimate	Std. Error	z-value	p	Lower	Upper
Psychological Capital	→ Media Social Use	0.283	0.040	2.063	0.009	0.044	0.162
Physical Activity	→ Media Social Use	0.408	0.040	20.040	<.001	0.729	0.887
Physical Activity	→ Psychological Capital	0.649	0.068	3.646	<.001	0.115	0.383

From the path analysis that has been done, Therefore, it may be said that activity significantly affects psychological capital ($p < 0.001$). After mediation, physical activity has a significant impact on social media use through psychological capital mediation ($p < 0.001$). the overall impact that exercise has on social media use is 0.629.

The path coefficient of psychological capital on social media use is 0.283, physical activity on social media use is 0.408, while physical activity on psychological capital is 0.649. The results show that their path coefficient values are in the range of 0-1, meaning that the relationship between variables has a positive value, in particular, social media use, psychological capital, and physical activity all have a positive relationship.

Figure 1. Path Plot.



Social media use has a direct influence on physical activity of 0.09. Social media use also has a direct influence on psychological capital of -0.18, and psychological capital has a direct influence on physical activity of 0.23. This means that the three aspects together have a direct influence on each other.

Discussion

From the analysis that has been done, it proves that there is a connection between abandoned children's use of social media and physical activity. Results of this investigation are similar with studies carried by (Chen et al., 2022) It demonstrates there's an intrinsic connection between physical activity and social media use. This is because, as times have changed, the telephone has become an important instrument in daily life, leading to a dependence on people. This study also in line with research conducted by Hayes (2022) that there is a relationship between the use of social media and physical activity, where the presence of technology in the form of new media such as social media has provided a new way for sports organizations to continue to engage in consumers to promote physical activity if they do not see sports activities directly, this new media technology will allow individuals to share content and provide inter-activity facilities.

According to the regression analysis's results, there is a positive correlation between the two, indicating that the more physically active abandoned children are, the bigger likely it is that they would use social media. Psychological capital is significantly positively impacted by physical activity; hence, the more physically active one is, the better one's psychological capital. This is in line with research from (Lin et al., 2025), that there is a significant relationship between physical activity and psychological capital, which is mediated by social relationships. Additionally, social media use significantly improves psychological capital. This is consistent with studies that have been done (Lu et al., 2022; Liu et al., 2022) that

psychological capital can significantly predict social media addiction and physical activity by playing a role between the two aspects.

Physical and social anxiety is a syndrome that is becoming more common, and public health policies are needed to reduce the occurrence of physical and social anxiety (Rojo-Ramos et al., 2024). But, this study found that physical activity performed by abandoned children was high, dominated by boys. Supporting literature is also presented by (Ernst & Pangrazi, 1999; Hovell et al., 1999; Lindquist et al., 1999) it implies that boys are bigger likely than females to be active at all ages. Results show that overall abandoned children engage in stronger physical activity, even while participating in less physical activity/ remains relatively consistent.

Physical well-being is described as a state of metabolism and cognition that indicates the absence of a disease in the body, which can be obtained through exercise, nutrition, or ergogenic assistance aimed at obtaining a life with maximum functionality (Garcia-falgueras, 2021). Physical activity carried out by abandoned children can be seen in several activities, namely physical activity in the education room, sports room, even when they are at home which will be measured using MET (Metabolic Equivalent) this represents the resting metabolic rate ratio, and can be in the form of kcal/kg/hour. While physical activity in the sports room, usually children will do physical activity according to their own wishes, such as running, swimming, playing basketball or soccer, and others. In the education space, children will do physical activities led by their teachers when they are at school. Research from (Kotarska et al., 2021), shows that students who are more physically active can receive better results in terms of psychological, environmental, and physical when compared to students who are not active in physical activity. This is because exercise releases neurotransmitters such as dopamine which will cause a sense of pleasure, where this pleasure is related to self-control because it can increase focus on the brain and reduce the presence of intrusive behavior (Lin et al., 2025). Psychological conditions and physical conditions that are not optimal can hinder the individual's concentration (Jannah, 2017). There are several benefits of physical activity, including reducing raising the risk of premature death, heart disease, cancer, diabetes, dietary patterns, and depression (Kokkinos, 2012; Warburton et al., 2006; Shephard, 1991; Tafuri et al., 2024).

At home, children can also do light physical activities, such as sweeping or mopping. At high levels of activity, children may also engage in physical activity by carrying or lifting heavy loads, climbing or hiking. Sometimes, there are some physical activities that children are not aware of, namely when children play chase and joke with their playmates. Whatever the reason for the physical activity, and goals of physical activity program is to achieve a life quality, personal satisfaction, and well-being (Vieira et al., 2018). This psychological approach will lead to two things, namely inhibiting or helping to do an activity (Jannah et al., 2023).

From the results above, it can be seen that factors within the individual such as psychological capital consisting of optimism, efficacy, hope, resilience, and self-control over Social media use has a significant impact on a person's personal growth. Significantly, the presence of positive psychological interventions can help improve an individual's mental health, growth and development, adaptability, social skills, motivation to learn, or social well-being and adaptation (Tejada-Gallardo et al., 2020). Thus, if someone feels happy with himself, he will create a positive perspective in his life (Rahmania & Sari, 2024). Conversely, the presence of a negative side of psychology can have an adverse impact on academic performance, career trajectories, social relationships, or mental health (Limone & Toto, 2022). In addition, there are several elements that can encourage youngsters to be more physically active, namely social factors and environmental factors (Patnode et al., 2010).

Social factors consist of aspects of parental support, parental physical activity, and support from peers. While environmental factors can be in the form of equipment for physical activity at home, weather, temperature, and security of the surrounding environment. This causes boys to spend more of their free time doing unstructured physical activities than girls (CDC, 2003). However, the explanation regarding these 2 factors was not explored in this study, so it requires further research. There is a significant positive correlation between family support and physical activity time, both of which can increase perceptions of social support (Engels et al., 2022). In this case, physical exercise is likened to a provider or platform for building support networks and social interactions, where during the physical exercise process, there is increased interaction and communication between trainers and exercise partners, which will increase individuals' understanding and perception of social support (Lin et al., 2025).



The activity of using social media is also dominated by boys. These results are consistent with studies carried out by (Akman & Turhan, 2018), which states that there are differences in perspective Men often utilize social media to obtain learning, according to the gender gap in social media use. Although social networking sites are preferred by women, men also use social media and other online services (Kim et al., 2014). Individuals who experience addiction to their cell phones often ignore their surroundings and interpersonal communication in the real world (Zagalaz-Sánchez et al., 2019). Additionally, engaging in physical activity can help them save time playing cellphones and reduce social media use (Jovic & Đindic, 2011).

The positive correlation shows that physical activity is higher, the higher of use social media. Additionally, the presence of psychological capital has an impact on this. Aspects of psychological capital include efficacy, optimism, resilience, and hope. The higher of physical activity, and the higher the of optimism, efficacy, hope, resilience. Abandoned children who have high physical activity and social media use, they have high hope, efficacy, resilience, and optimism (Wei et al., 2024; Lowery & Cassidy, 2022), so they have the desire to adapt to poor conditions, and have confidence in their abilities, and create an impact on themselves. So, even though they have heavy physical activities, they are also able to control themselves in order to use social media properly. In addition, several studies have shown that psychological well-being can control individuals from addictive behavior (Robertson et al., 2018), and self-efficacy helps individuals to exercise better self-control (Chen et al., 2022). According to, there is a close correlation between physical activity and the level of self-control (Du & Zhang, 2022), because with high levels of self-control, it shows that perseverance and discipline are good, and have a great desire to be able to solve challenges and difficulties (Lingzhi et al., 2022). This is also in line with research conducted by that, the presence of higher self-control will make it more likely for individuals to engage in physical activity (Yu et al., 2022), as well as maintain exercise intensity and frequency, this is because individuals can manage their resources and time well (Lin et al., 2025).

Conclusions

Based on the results of the study, it shows that physical activity can significantly and positively predict the use of social media in students. This finding indicates that the higher the physical activity, the higher the use of social media experienced by abandoned children. Psychological capital can mediate between physical activity and social media use in abandoned children. Psychological capital consisting of hope, efficacy, resilience, and also optimism has a positive impact on mediating physical activity with the use of social media, which can positively and significantly strengthen the use of physical activity with the use of social media. The results of this study also show that physical activity in abandoned children is in the high category, namely 53 (26%) boys, 47 (24%) girls. The use of social media is also quite high with a range of 99 (49%) boys, 88 (44%) girls. Psychological capital is quite high with a percentage of 49 (47%) boys and 81 (40%) girls.

The findings will provide an overview of the situation of abandoned children in this era, which will help illustrate and align with the third and tenth goals of the SDGs program designed by the United Nations (UN) to achieve a better and sustainable life. At the same time, the government should increase their concern for abandoned children, given that it is a right that every child should have. Future research can further investigate other aspects that can be studied in abandoned children, given the lack of research on abandoned children.

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