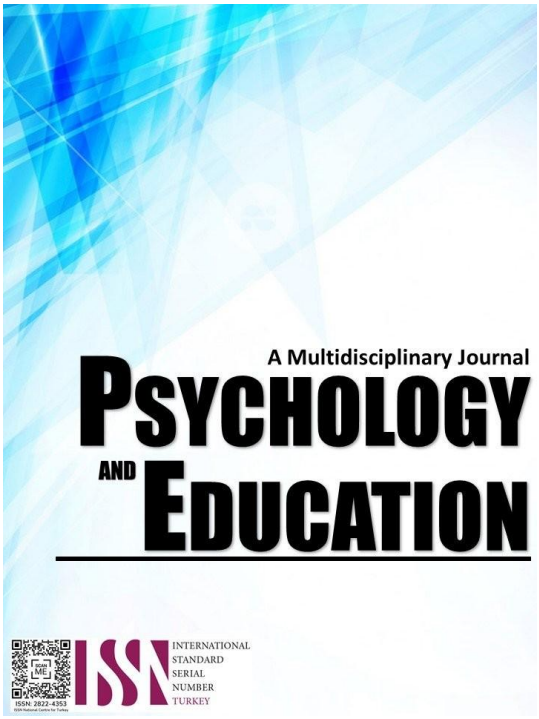
THE MEDIATING EFFECT OF SELF-ESTEEM ON THE RELATIONSHIP BETWEEN PERCEIVED PHYSICAL LITERACY AND PHYSICAL ACTIVITY AMONG COLLEGE STUDENTS



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Research Article

The Mediating Effect of Self-Esteem on the Relationship Between Perceived Physical Literacy and Physical Activity Among College Students

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Abstract

The purpose of this study was to investigate the mediating effect of self-esteem on the relationship between perceived physical literacy and physical activity among college students in Surigao del Sur, employing a descriptive correlational approach. Adapted questionnaires were used to collect data. Mean, Standard deviation, Pearson r, and Mediation Analysis using the Sobel Test were the statistical tools used. The results showed that respondents' physical literacy is high. Additionally, engagement in physical activity is moderate, while self-esteem is high. Furthermore, physical literacy has a strong, significant direct effect on both physical activity and self-esteem, but self-esteem does not mediate this relationship.

Keywords: *self-esteem, physical literacy, physical activity, quantitative descriptive correlational, Philippines*

Introduction

Physical activity is any movement that involves the skeletal muscles. This requires activities like walking, running, cycling, and even sports (World Health Organization, 2020). Despite its significant health benefits, studies show that physical activity remains a less practiced behavior in society and is therefore a significant global public health issue, ranking as the fourth most common behavioral risk factor for non-communicable diseases (Guthold et al., 2018). According to the World Health Organization (WHO), people who are not physically active have a twenty to thirty percent increased risk of death compared to sufficiently active people (WHO, 2020). Recent data revealed that nearly one-third of adults globally—around 1.8 billion people—failed to meet the recommended physical activity levels in 2022. This signifies a concerning rise in physical inactivity, which increased by approximately five percentage points from 2010 to 2022 (World Health Organization, 2024).

Globally, physical activity levels are low (Hallal et al., 2012; Keats et al., 2017; van Sluijter et al., 2021). These low levels of physical activity have also been demonstrated within Canada (ParticipACTION, 2024). A study by Purgato et al. (2021) on physical activity found that Turkish and Moroccan women lack sufficient physical activity and are therefore more likely to develop obesity and diseases such as diabetes. Similarly, a study by Matt (2023) found that approximately 64% of people aged 16 or older in the United Kingdom engage in physical activity. However, only 15 percent of the population regularly participates in structured exercise. Additionally, 50% of individuals who start an exercise regimen discontinue it within the first 6 months.

In the Philippine setting, Filipino students have recently been found to have the second-highest prevalence of insufficient Physical Activity among school-aged adolescents worldwide (World Health Organization, 2019). According to Guthold et al. (2018), a recent report on worldwide trends in insufficient physical activity found that almost 40 percent of Filipinos are insufficiently active, with 30 percent of Filipino males and 50 percent of Filipino females insufficiently active. In addition, according to a national survey conducted from January 2018 to February 2019, 82.7 percent of Filipino adolescents aged 10 to 17 were not meeting physical activity recommendations (FNRI, 2019; Pantalen et al., 2020). Moreover, only 19 percent of children and adolescents met the recommended levels of physical activity, highlighting a nationwide concern (Cagas et al., 2022). Despite policies promoting physical education, the school setting received a grade of negative C in the 2022 Philippine Report Card on Physical Activity for Children and Adolescents, with only 46.5 percent of students attended PE classes on three or more days each week and these findings point to the urgent need for enhanced school-based strategies to increase student physical activity engagement (Cagas et al., 2022; GSHS 2015).

Perceived physical literacy refers to an individual's self-assessment of their physical competence, encompassing their understanding of the value of exercise, physical abilities, knowledge of physical literacy in exercise adherence, motivational aspects, self-confidence, and physical activity behavior (Carl et al., 2023). Moreover, emerging studies indicate that physical literacy remains a global issue that warrants attention as part of efforts to address concerns about physical health awareness and initiatives. (Liu & Chen, 2021). Additionally, 44% of aligned studies found that Perceived Physical Literacy is related to Physical Activity and that, without it, individuals would be less likely to engage in any form of Physical Activity (Edwards et al., 2017).

Moreover, self-esteem is another thing. It is a person's view of themselves, including their appearance and personality. Aside from that, it is closely linked to self-worth, which is also essential to establishing healthier well-being. All these factors are considered critical in psychology, as they greatly influence an individual's character traits. (McAdams et al., 2021). That is why relevant research in the field of physical education is more focused on the importance of being engaged in any form of physical activity for at least two to three times a week. (Lindwall, 2013). Similarly, Ozsaker Dorak et al. (2012) found that children who are more engaged in physical activity show higher self-esteem. Supporting these findings, Sun (2020) also found that physical activity can effectively boost self-esteem. Studies have shown that physical activities are highly beneficial in managing issues in mental health, as anxiety, depression, anger, tension, reaction to stress, self-esteem, and self-efficacy, which are essential for better living. (Goodwin, 2003; Hansen et al., 2001).

In addition, Guo (2016) found that college students involved in any form of physical activity are highly influenced by their self-esteem. Moreover, other studies indicate that engagement in these physical activities is always equal to the level of physical self-esteem (Zhang & Sun, 2009). Similarly, Spence et al. (2005) conducted a meta-analysis of more than 100 studies exploring the relationship between physical activity and self-esteem in adults, and the results showed that physical activity increased overall self-esteem and physical self-esteem in adults.

Although several studies have explored self-esteem, perceived physical literacy, and physical activity, She et al. (2023) conducted a cross-sectional study involving 5,184 college students aged 17 to 21. This study used validated measures and found through regression and mediation analysis that physical literacy significantly and partially mediated the relationship between positive self-esteem and physical activity, accounting for 26.93% of the total effect. However, the study presented a geographical limitation, as it focused primarily on a sample of Chinese college students, limiting the generalizability of its findings to other cultural or regional contexts. In addition, few studies considered self-esteem as a mediating factor for the perceived relationship between physical literacy and physical activity. There also exists a limitation in the availability of studies primarily investigating perceived physical literacy of college students in terms of knowledge and understanding, self-expression and communication with others, sense of self and self-confidence (Tores, R., & Polaran, P., 2024); the level of perceived physical activity and self-esteem in terms of self-efficacy, and academic engagement among college students at public higher education institutions in the Philippines.

For the dissemination plan, the researcher will present the study's findings at the International Physical Education Convention, the PATHFit meeting, and in regional forums and conferences. This study will also be presented on various academic platforms in the hope of reaching agencies and organizations involved in ensuring the quality delivery of education to students. Moreover, the participating schools will receive copies of this book-bound thesis after the study is completed to ensure the findings are applied in practice and to maximize their benefit. The peer-reviewed version of this research will be made available to the public by publishing it in reputable academic journals. This will allow other scholars with similar research interests to use it as a helpful resource. Additionally, the study's findings will be presented at various research conferences, both national and international, to broaden its scope of influence and contribute to the body of knowledge.

Research Questions

This study aimed to determine the mediating effect of self-esteem on the relationship between perceived physical literacy and physical activity among college students in Surigao del Sur. Specifically, this study sought to answer the following questions:

1. What is the level of physical literacy among the college students in terms of:
    1.1. knowledge and understanding;
    1.2. self-expression and communication with others; and
    1.3. sense of self and self-confidence?
2. What is the level of physical activity among the college students in terms of:
    2.1. type;
    2.2. frequency;
    2.3. intensity;
    2.4. duration; and
    2.5. total length?
3. What is the level of self-esteem among college students?
4. Is there a significant relationship between:
    4.1. perceived physical literacy and physical activity;
    4.2. perceived physical literacy and self-esteem; and
    4.3. self-esteem and physical activity?
5. Does self-esteem significantly mediate the relationship between perceived physical literacy and physical activity?

Methodology

Research Design

This study used a quantitative research design, utilizing a descriptive correlational approach to determine the mediating effect of self-esteem on the relationship between perceived physical literacy and physical activity among college students. Creswell (2014) defines quantitative research as an approach that uses a systematic process. This research design uses numerical data and statistical analysis to examine relationships among variables, which aligns with this study as it quantifies the influence of perceived physical literacy and self-esteem on college students' physical activity levels. As applied in this study, the descriptive correlational design helped the researcher to determine and describe the relationship among the variables- perceived physical literacy, self-esteem, and physical activity among college students without manipulating any of the variables as required to do when using a descriptive research design(Polit & Beck, 2017).

Furthermore, a descriptive correlational design was successfully used in this study to measure the variables shown in the conceptual

framework. The study also utilized a validated questionnaire to ensure the reliability and validity of this academic inquiry. This study used a descriptive-correlational design because it intends to describe the phenomenon without manipulating the variables. In this way, the research can determine if there is a correlation between physical activity and self-esteem among the respondents in this study. Using statistical analyses, such as Pearson correlation and regression, the relationships among these variables will be determined. The data gathered is used to expand the body of knowledge regarding physical literacy and self-esteem. This research aims to identify patterns that may be useful to other researchers and to those who wish to use this paper as a baseline for studying related areas of interest.

Respondents

The respondents of this study were college students from the different campuses of a selected state university in Surigao del Sur, Region XIII, Philippines. The selected state university in the province has a total of 32,989 enrolled college students. Using the sample size calculator from Raosoft, Inc., with a 95% confidence level, a 5% margin of error, and a 50% response rate, the required sample size for this study was 380 respondents. This sample size is corroborated by the study of Voo et al. (2021), which used the same sample size calculated with the Raosoft calculator at a 95 percent confidence level, a margin of error of 5 percent, and a response distribution of 50 percent.

To ensure unbiased representation and correct results, a stratified random sampling technique was implemented. The strata were formed based on the location of the campus (Campus A-G). This study also used a random sample proportional to the size of each stratum, similar to the stratum's size within the total population. Afterwards, these subsets were combined to create a representative sample of the entire student population.

In this study, adherence to the Data Privacy Act of 2012 (Republic Act No. 10173) is strictly observed. The researcher did not access or retrieve the names of potential respondents without their signed informed consent. This is in accordance with the study's commitment to ethical considerations in handling confidential data. Hence, systematic random sampling was used to select class sections rather than individual names. To ensure fair representation in this study, a randomization tool (AnnaBet.com) was used to generate a randomized list of class sections. From the selected sections, all students who met the selection criteria were invited to participate.

To identify eligible participants for this study, the following inclusion criteria were established: the respondent must be a bona fide college student enrolled in the 2025–2026 academic year at the selected state university in Surigao del Sur and studying at any of the identified campuses (Campus A–G). On the other hand, students who were officially enrolled during the data collection period were excluded from the study. The exclusion criterion is students who are not enrolled in the 2025-2026 academic year at the selected state university in Surigao del Sur.

The selection process was conducted regardless of age, gender, or course. All respondents were aged 18 and above and were therefore not considered part of any vulnerable population. The researcher ensured that these participants were capable of giving informed consent and of understanding the nature and purpose of the research. Appropriate safeguards were in place to uphold the rights and well-being of all respondents. Additionally, all selected students were asked to sign an informed consent form before participating in the study. Furthermore, a referral protocol was in place for respondents who experienced emotional distress during data collection. When necessary, the researcher provided an immediate debriefing and referred the respondent to the school's guidance counselor or appropriate local psychosocial or healthcare services.

Instrument

In this study, the researcher used an adapted questionnaire- the tool for physical literacy is adapted from Raymond Ki's (2016) work, titled "Construction and Validation of a Perceived Physical Literacy Instrument for Physical Education Teachers,". The study's instrument was pilot-tested to enhance its reliability and validity. The scale used in this study evaluated individuals' self-perceptions across these three domains: knowledge and understanding, self-expression and communication, and self-confidence (Sum et al., 2016). It is composed of a 5-point Likert scale, ranging from Strongly Agree to Strongly Disagree, to quantify how individuals perceive their physical literacy in relation to physical activity. With this, the instrument was considered a reliable tool for measuring generalized physical literacy. The instrument is handy for students because their involvement in various physical activities is highly relevant to developing their fundamental movement skills and internalizing their physical literacy (Whitehead, 2010). Additionally, the study used Cronbach's alpha coefficients for the factors, which ranged from 0.73 to 0.76 and were considered acceptable or satisfactory.

On the other hand, the Instrument used to measure the Physical Activity variable was developed by Min Haeng Cho in 2016 and is validated by experts. This scale is a self-report tool designed to assess the frequency, duration, intensity, overall duration, and type of activities a person engages in during leisure time (Cho, 2016). It utilizes a 5-point Likert scale, with its descriptive equivalents from "Very High" to "Very Low", to determine participants' involvement in different forms of exercise over a specific period. After that, it provides an overall score that measures respondents' physical activity levels. The study also used Cronbach's alpha coefficients for the factors, which ranged from 0.61 to 0.78. These numbers are considered acceptable or satisfactory.

Furthermore, the third questionnaire used in this study is the Self-Esteem Scale by Rosenberg, M. (1965). This scale measures global self-worth through 10 items that assess positive and negative feelings about the self (Rosenberg, 1965). It uses a 5-point Likert scale from "Very High", "High", "Moderate", "Low", "Very Low" to measure the level of self-esteem an individual perceives about

themselves. Each response reflects the degree to which the respondent agrees with statements about their self-worth, yielding an overall score indicating their global self-esteem level (Rosenberg, 1965). The Cronbach's alpha coefficient for the factors ranged from 0.77 to 0.88, indicating good internal consistency.

Procedure

In conducting this study, the researcher adhered to strict systematic procedures to ensure ethical considerations and minimize risks. First, the researcher secured a letter of permission to gather data from the UIC Graduate School Dean. The researcher then submitted a letter to the UIC Research Ethics Committee requesting ethical clearance for the study. After the researcher received ethical clearance, the letter was finalized and forwarded to the campus directors of the selected university. After receiving approval, the researcher contacted the Physical Education (PE) instructors to secure access to the students who served as respondents in this study. Once coordination with the PE teachers was complete, an orientation session was held for the selected students.

During the session, the researcher elaborated on the purpose of conducting the study, the significance of the respondents' participation, and the ethical considerations involved. Afterwards, Informed Consent Forms (ICFs) were disseminated to the respondents, ensuring they understood their rights- voluntary participation and confidentiality. While the study poses minimal risk, several concerns were raised, including discomfort or self-consciousness when responding to questions about physical literacy, physical activity, or self-esteem. To lessen these risks, the researcher assured the respondents that they could skip any questions they felt uncomfortable answering and reminded them that their participation was entirely voluntary and that they had the right to withdraw at any time without consequences. Additionally, the respondents were encouraged to clear misunderstandings by asking questions about any part of the whole research process. Once informed consent was obtained, the researcher distributed the questionnaires and provided clear instructions, guiding the students as they completed the survey to ensure accurate and thoughtful responses.

To maintain excellent adherence to ethical considerations, such as privacy and confidentiality, all collected data were coded, anonymized, and stored securely in a password-protected digital file accessible only to the researcher. All printed copies were kept in a locked cabinet and shredded after data analysis was completed. In compliance with the Data Privacy Act of 2012 (RA 10173), personal information was not asked for, and all responses remained private and were used solely for the research. After the study was completed, all data were retained for no more than 1 year, after which they were permanently deleted or shredded. Respondents were assured of full access to any information they wished to know, including their right to be informed about the purpose and process of the research, the handling of their data, and how the findings were used and disseminated, in accordance with the school's ethical research standards. Finally, the data were collated and tallied for statistical analysis.

Data Analysis

The following were the statistical tools used in analyzing the data gathered:

The data gathered from the respondents were analyzed using several statistical techniques.

Mean. This was used to determine the levels of perceived physical literacy, physical activity, and self-esteem among college students.

Standard Deviation. This was used to determine how the data on perceived physical literacy, physical activity, and self-esteem were spread out from the mean.

Pearson Product-Moment Correlation Coefficient or Pearson-r. This was used to determine the significance of the relationship between perceived physical literacy, physical activity, and self-esteem among college students.

Mediation Analysis using the Sobel Test. This was used to determine the significant influence of perceived physical literacy and self-esteem on physical activity and to identify which indicators of physical literacy and self-esteem best predicted college students' physical activity levels.

Ethical Considerations

The researcher was fully committed to upholding the highest ethical standards in the conduct of the study by submitting it for review and approval by the University of the Immaculate Conception Research Ethics Committee (UIC-REC). As a licensed Physical Education Educator at a state university and a graduate of the Philippine Normal University – Mindanao, the researcher brought both academic and professional expertise to ensure the integrity and quality of the research. With enough experience in sharing in the academe and in presenting and conducting both quantitative and qualitative studies, the researcher was well-informed in research practices. To ensure that the researcher's actions are guided, collaboration with the research adviser and panel members further strengthened the ethical foundation of the study, ensuring timely and relevant feedback and adherence to institutional research protocols.

Moreover, the researcher ensured that references were from reputable sources to ensure quality and accurate data to support the claims. The researcher also ensured that rich academic resources, such as the UIC Library Resource Service Center, ERIC (Education Resources Information Center), RemoteXS, EmeraldInsight, and World Dissertation Library, provided a comprehensive collection of scholarly materials necessary for the literature review and data analysis phases of the study. Additional peer-reviewed journals and

online databases provided strong support in maintaining the academic validity and reliability of the research process. These resources, combined with the researcher's understanding and adherence to ethical standards, ensured that the study was conducted with utmost professionalism, academic integrity, and transparency.

Results and Discussion

This section presents the analysis and interpretation of data.

Level of Physical Literacy among College Students

Table 1 revealed that the overall level of physical literacy among college students is 3.70, which is described as high, indicating that perceived physical literacy is highly evident among college students. The results showed that students generally perceive themselves as physically literate individuals, with the right level of understanding and competence. This further suggested that most college students already have the motivation needed to engage in long-term physical activity. Additionally, the overall standard deviation of 0.50 in the same table, which is less than 1, indicates that the respondents have ratings near the overall mean. This means that, aside from the evident manifestation of a thorough understanding of what physical literacy is, it also shows consistency in the level of understanding students have of it.

The findings supported the view of Uzturk et al. (2023), who found that age groups, specifically late adolescents, had high scores on physical literacy tests. This means that they too understand the importance of physical literacy more than just knowing its definition and characteristics- all of which are necessary for an active lifestyle. It also aligns with the study by Cause et al. (2024), which found that students achieved high scores in physical literacy, indicating that they understand the benefits of being physically active. This finding is also supported by the study by Torres and Polaran (2024), which found that respondents' perceived physical literacy is high, indicating that students who demonstrate strong physical literacy manifest confidence in their ability to engage in sports, recreational activities, or daily routines.

Table 1. *Level of Physical Literacy among College Students*

Mean		*SD*	*Description*
Knowledge and Understanding			
1. Having a positive attitude and interest in sports.	3.71	.91	High
2. Appreciating themselves or others doing sports.	4.10	.80	High
3. Being aware of the benefits of sports related to health.	4.55	.62	Very High
Category Mean	4.12	.58	High
Self-expression and Communication with Others			
1. Having strong social skills	3.45	.81	High
2. Being confident in wild/natural survival	3.39	.83	Moderate
3. Being capable in handling problems and difficulties.	3.53	.83	High
Category Mean	3.46	.67	High
Sense of Self and Self-confidence			
1. Being physically fit, in accordance to their age.	3.50	.91	High
2. Possessing self-management skills for fitness.	3.45	.78	High
3. Possessing self-evaluation skills for health/	3.54	.77	High
4. Being capable in handling problems and difficulties.	3.57	.77	High
Category Mean	3.52	.60	High
Overall Mean	3.70	.50	High

Knowledge and understanding. It indicates that its category mean is 4.12, which is high, with item ratings ranging from 3.71 to 4.55. Consequently, the item with a positive attitude and interest in sports has a mean of 3.71, while being aware of the health benefits of sports has a mean rating of 4.55. This means that most students affirm the importance of sports and physical activity as essential components of a healthy lifestyle. Their awareness of the health-related benefits of sports reflects a strong cognitive foundation of physical literacy.

The findings corroborated with the studies of Delas Peñas et al. (2023), Torres & Polaran (2024), and Cause et al. (2024), which stated that students who possess a high level of physical literacy in knowledge and understanding also show a solid grasp of in-depth understanding of physical literacy concepts and values.

Self-expression and Communication with Others. The study revealed a category mean of 3.46, indicating a high level, with item ratings ranging from 3.39 to 3.53. Consequently, the item on being confident in wild/natural survival had a mean of 3.39, while the item on being capable of handling problems and difficulties had a mean of 3.53. This means that students see social interactions as a space not just to connect with others but also to express themselves confidently. Effective communication is hereby manifested in this result. People who feel a sense of belonging are more likely to show teamwork, adaptability, and confidence when faced with physical challenges.

The findings supported the study by Licudine and Salva (2024), which found that communication with others is important for

developing meaningful relationships. When rapport is established, chances are self-expression will be more comfortable and create a feeling of security when an individual wants to be true to what he feels. This emphasizes that students' ability to communicate effectively and establish positive relationships in physical activity settings is a learning opportunity.

Sense of Self and Self-confidence. This item received a high category mean rating of 3.52, which falls within the range of 3.45 to 3.57. Notably, the item on possessing self-management skills for fitness has a mean rating of 3.45. In contrast, the item on being able to handle problems and difficulties has a mean rating of 3.57. This suggests that students had a positive self-concept, which manifested as confidence and autonomy in managing their own physical literacy. It indicated that these students believe they can overcome challenges and maintain their high level of physical literacy.

The findings also supported the study by Cengiz (2023), which found that adolescents obtained a high mean score on items related to sense of self and self-confidence in physical literacy. This indicated that they possess a strong belief in their physical abilities. Similarly, Delas Peñas et al. (2023) found a very high mean in self-esteem and self-confidence, suggesting that students develop strong self-assurance and a positive attitude toward physical activity. These results are consistent with Yılmaz and Kabak (2021), who similarly reported a high mean score, indicating that adolescents exhibit confidence and awareness of their physical abilities when physical task engagement is demanded.

Level of Physical Activity among College Students

The degree of physical activity among college students is seen in Table 2. In the table, 2.73 is considered moderate, indicating that college students do not engage in physical activities to the same extent. These results suggest that although students participate in some physical activities, monitoring and consistency are highly challenging for them.

The results support those of Khan et al. (2024), showing that students who engage in moderate-intensity physical activities show improved health status. Wang et al. (2025) reported that students who opt not to be so engaged with physical activities are found to be moody and less present in their decision-making (Espino et al., 2019)

In addition, the overall standard deviation is 0.63, indicating that ratings are close to the average. These findings confirmed that students had relatively similar perceptions of participation in physical activity. The discovery of moderate physical activity is consistent with the research by Elshahat et al. (2021), who observed that while many university students occasionally participate in physical activity, it does not guarantee full adherence to experience its benefits. In fact, only a few meet the recommended guidelines for frequency, intensity, and duration. This validated the global concern emphasized by the World Health Organization (2020) that sedentary lifestyles and inconsistent exercise participation are clearly evident among young adults, especially those in the academic population.

Table 2. *Level of Physical Activity among College Students*

	Mean	*SD*	*Description*
Type performing/engaging in physical activity in terms of …			
1. All types of cardiovascular exercise, resistance exercise, and flexibility exercise.	3.18	.78	Moderate
2. Two types of physical activity among cardiovascular exercise, resistance exercise, flexibility exercise.	3.34	.81	Moderate
3. One type of physical activity among them	3.60	.84	High
4. Arts & crafts	3.24	.99	Moderate
5. Sedentary activities	3.18	.89	Moderate
Category Mean	3.36	.56	Moderate
Frequency			
1. Engaging in physical activities frequently	2.65	1.14	Moderate
Category Mean	2.65	1.14	Moderate
Intensity			
1. Intensity of their physical activity	2.96	.68	Moderate
Category Mean	2.96	.68	Moderate
Duration			
1. Duration of engagement in physical activity in terms of the typical length of time each session	2.14	1.02	Low
Category Mean	2.14	1.02	Low
Total Length Engagement			
1. Maintaining regular physical activity in terms of the number of months	2.62	.89	Moderate
Category Mean	2.62	.89	Moderate
Overall Mean	2.73	.63	Moderate

Type of Physical Activities. The mean ratings for the items range from 3.18 to 3.60, with a category mean of 3.36, indicating moderate agreement. Items that involve performing or engaging in cardiovascular, resistance, and flexibility exercises, as well as sedentary activities, have a mean rating of 3.18. In contrast, the item that involves performing only one type of physical activity has a mean rating

of 3.60. This finding suggests that students tend to focus on one type of activity rather than engage in different forms of exercise.

This finding aligns with Kljajević et al. (2022), who found that university students are less likely to engage in moderate cardio, flexibility, and resistance training. This also corroborated the studies of Choi et al. (2021) and Jiang et al. (2024), which indicated that college students who like to do physical activities show a moderate level of sedentary behavior.

Frequency of Physical Activity. It has garnered a moderate category mean rating of 2.65. Notably, the only item in this domain, regarding the frequency of physical activity, has a mean rating of 2.65. This suggests that students participate in physical activities occasionally.

This finding aligned with the study by Lu (2025) and Du et al. (2025), who reported that students involved in physical activity exhibit a moderate level of 2 to 3 days per week. This finding is corroborated by a similar study by Tan et al. (2020), who found that students who engage in physical activity have a moderate level of activity, 3 to 5 days/week. Additionally, it aligns with the study by Espino et al. (2020), which found that moderate levels of physical activity, in terms of frequency, are 2 to 3 days per week, and walking is recommended at about 5 to 6 days/week.

Intensity of Physical Activity. The category mean for physical activity intensity is 2.96, which is moderate. The only item in this domain that reflects the intensity of their physical activity has a mean rating of 2.96. The findings revealed that students exhibit moderate engagement in physical activities.

The results of this study match those of Slavken et al. (2024), suggesting that students involved in physical activities exhibit moderate movement over 21–64 minutes per day. This is also supported by Verma et al. (2022), who reported that students who engage in moderate-intensity activities tend to have a routine of exercising for at least 30 minutes per day.

Physical Activity Duration. The average duration of physical activity is 2.14 and is considered low. One item in this area, the duration of physical activity in terms of the typical duration of each session, reflects an average of 2.14. The study found that students prefer less rigorous physical activities.

This discovery was consistent with Verma et al.'s study. (2022), who shared that today's youth are nearing the risks of having a sedentary lifestyle. This low level of physical activity involvement revealed that technology affected the youth's level of physical activity.

Total Length Engagement. It reflected an average category of 2.62, described as moderate. One element of this field, maintaining regular physical activity in terms of months, reflects an average rating of 2.62. The results showed that students are inconsistent in their attendance, making their exercises irregular, thus lessening the effect on their holistic health.

This result matches the findings of Lu (2025), which show that students who exercise 2–3 days a week exhibit a moderate level of physical activity. It also aligns with the study by Avery (2020), which reported an average of 5 hours of physical activity engagement, indicating a moderate level of physical activity. Similarly, the result supported the study of Marenus et al. (2022), who reported that college students who participated for an average of 2.64 days per week demonstrated a moderate level of physical activity.

Level of Self-Esteem among College Students

According to Table 3, the overall mean self-esteem score of college students is 3.52. The results indicated that self-esteem among college students is often manifested. This means that students generally have a favorable view of themselves, demonstrating confidence and appreciation for their worth and abilities, though they still experience moments of self-doubt and uncertainty. Their responses suggested that self-esteem is significant to their overall well-being.

Table 3. *Level of Self-Esteem among College Students*

	Mean	*SD*	*Description*
1. Being satisfied with themselves in general.	3.66	.98	High
2. Thinking they are no good at all at times. (r)	2.38	1.17	Low
3. Feeling that they have many good qualities.	3.36	.92	Moderate
4. Being able to do things as well as most people.	3.45	.86	High
5. Feeling they do not have much to be proud of. (r)	2.55	1.17	Low
6. Feeling certainly useless at times. (r)	2.60	1.22	Moderate
7. Feeling that they are a person of worth.	3.52	1.08	High
8. Wishing they could have more respect for themselves. (r)	2.49	1.27	Low
9. Feeling often like a failure. (r)	2.53	1.22	Low
10. Taking a positive attitude toward themselves.	3.73	1.14	High
Overall Mean	3.52	.59	High

Legend*: Items with (R) were subjected to reverse coding before recomputing the overall mean of self-esteem*

The overall standard deviation is 0.59, which indicates that the respondents' responses are closer to the mean. The findings exhibited consistency in their perceptions of self-esteem. The mean ratings of the different items range from 2.38 to 3.73. Specifically, the item thinking they are no good at all at times has a mean rating of 2.38, while the item taking a positive attitude toward themselves reflects

a mean of 3.73.

The findings corroborated those of Prada et al. (2024), who reported that university students exhibited relatively high self-esteem, with an average score on the Rosenberg Self-Esteem Scale. The finding also supported the study of Vicente et al. (2018), who reported that students at Adventist University in the Philippines have a high level of self-esteem.

Significance of the Relationship of Physical Literacy, Physical Activity, and Self-esteem among College Students

The correlation of the variables is presented in Table 4. The findings showed that physical literacy has a weak positive relationship with physical activity among college students, with an R-value of 0.32 and a p-value of 0.00. This is less than the alpha set at 0.05, two-tailed, supporting a significant relationship. It means that as physical literacy increases, physical activity levels rise significantly.

Similarly, physical literacy showed a significant, positive, and moderate relationship with self-esteem among college students ($r = .52$, $p < .05$). This indicates that as physical literacy increases, self-esteem among college students also increases significantly.

Table 4. *Significance of the Relationship of Physical Literacy, Physical Activity, and Self-esteem among College Students*

	r	p-value	Remarks
Physical Literacy and Physical Activity	.32	.00	Significant
Physical Literacy and Self-esteem	.52	.00	Significant
Self-esteem and Physical Activity			

Additionally, self-esteem among college students showed a weak positive relationship with physical activity, with an R-value of .14, and a p-value of .00, which is less than the alpha set at .05, two-tailed, supporting a significant relationship. It means that the higher the level of self-esteem among college students, the more likely their physical activity will increase as well.

It shows that college students with higher levels of physical literacy, backed by motivation, confidence, and competence in movement-based skills, are more likely to engage in physical activities and develop higher self-esteem. The significant relationships suggested that physical literacy not only encouraged active involvement in physical activities but also improved the individual's sense of worth, capability, and overall psychological well-being. Students who are confident and fully aware of their physical abilities tend to see themselves as more valuable, experience less anxiety, and lead more active, healthier lifestyles.

This finding is consistent with the studies by Carl et al. (2023) and Edwards et al. (2017), who stated that perceived physical literacy is a significant factor in determining an individual's lifelong engagement in physical activity. They explained that a significant positive correlation exists, indicating that students with higher levels of physical literacy are more likely to engage in physical activity.

Moreover, the result supported the views of Chen et al. (2022) and Janković et al. (2024), who reported that physical literacy positively influences self-esteem through mechanisms such as self-efficacy. Individuals who perceive themselves as physically active are more likely to develop a stronger sense of self-worth and confidence, which in turn leads to increased engagement in physical activity. Likewise, Mahindru et al. (2023) and Cairney et al. (2022) asserted that promoting physical literacy contributes to both physical competence and emotional well-being, which is essential in fostering a holistic sense of health and self-esteem.

The significant correlations among physical literacy, self-esteem, and physical activity highlight their interdependence. Promoting students' physical literacy can lead to higher self-esteem and greater participation in physical activities, supporting not only their physical development but also their mental and emotional growth.

Significance of the Mediating Effect of Self-Esteem on the Relationship Between Physical Literacy and Physical Activity

In this study, a mediation analysis was conducted in JASP to assess the significance of self-esteem as a mediator between physical literacy and physical activity among college students. Table 5 shows that the direct, indirect, and total effects, as well as the path coefficients, are vital components in understanding physical literacy and physical activity.

Additionally, the direct effect of the independent variable, physical literacy, on the dependent variable, physical activity, excluding the mediator self-esteem, is 0.667 ($p < .001$). This indicates a statistically significant relationship among the variables. This means that for each unit increase in physical literacy, physical activity increases by 0.667 units. The result suggested a strong, evidence-based association between physical literacy and physical activity, indicating that individuals with higher levels of physical literacy report significantly greater physical activity.

On the other hand, results found an indirect effect of physical literacy on physical activity through self-esteem. A quantifiable measurement of –0.010 with $p = 0.568$ was found to be not significant. The negative value, though small, coupled with a p-value greater than the .05 significance level, indicated that self-esteem does not significantly mediate the relationship between physical literacy and physical activity. In other words, while physical literacy is considered a significant positive predictor of self-esteem (Estimate = 0.377, $p < .001$), the results reveal that self-esteem does not significantly predict physical activity (Estimate = –0.027, $p = .567$), confirming that there is no meaningful mediation that occurs in this relationship.

Table 5. *Significance of the Mediating Effect of Self-Esteem on the Relationship between Physical Literacy and Physical Activity*

Independent Variable (IV) *Dependent Variable (DV)* *Mediating Variable (MV)*	*Physical Literacy* *Physical Activity* *Self-esteem*		
	Standardized Beta (β)	*Standard Error*	*p-value*
Direct Effects (IV → DV)			
Physical Literacy on Physical Activity	0.667	0.056	< .001
Indirect Effects (IV→ MV → DV)			
Physical Activity→ Self-esteem → Physical Activity	- 0.010	0.018	0.568
Total Effects (IV → MV)			
Physical Literacy → Self-esteem	0.656	0.053	< .001
Path Coefficients			
Self-esteem → Physical Activity	0.027	0.048	0.567
Physical Literacy → Physical Activity	0.667	0.056	<.001
Physical Literacy → Self-esteem	0.377	0.055	<.001
R-Squared			
Physical Activity 0.272			
Self-esteem 0.102			

The total effect of physical literacy on physical activity is 0.656 ($p < .001$), representing the combined direct and indirect effects. Given that the indirect effect is negligible, the total effect is nearly equal to the direct effect, which reaffirms that the influence of physical literacy on physical activity occurs primarily through a direct pathway rather than through self-esteem. This finding underscored the robust and independent contribution of physical literacy to students' engagement in physical activity. The R-squared value for physical activity is 0.272, which suggests that approximately 27.2% of the variance in physical activity is explained by the model, which includes physical literacy as a predictor. This demonstrated a moderate explanatory power, as physical literacy accounts for a considerable portion of students' engagement in physical activity. Meanwhile, the R-squared value for self-esteem is 0.102, which indicates that only 10.2% of the variance in self-esteem is explained by physical literacy. This implies that while physical literacy influences self-esteem, other factors also play important roles in shaping students' self-worth.

The findings of this study aligned with those of Öztürk et al. (2023) and Myers (2023), who have also revealed that physical literacy is a key determinant of lifelong engagement in physical activity. A physically literate individual demonstrates an appreciation for movement and understands its value, which naturally encourages greater physical engagement (Whitehead, 2010; Carl et al., 2023). Moreover, the result that self-esteem did not significantly mediate this relationship suggested that the motivational and behavioral aspects of physical literacy are already sufficient drivers of activity engagement, independent of one's self-esteem. This is consistent with the argument of Cairney et al. (2019) and Whitehead (2013) that physical literacy integrates cognitive, emotional, and physical components, directly fostering participation.

As depicted in Figure 1, the path coefficient of 0.67 from physical literacy to physical activity supports a strong, positive, and statistically significant direct effect. This means that as students' physical literacy increases, their physical activity also rises, even when controlling for self-esteem. The standardized path from physical literacy to self-esteem (0.38) is positive and significant, reflecting that physically literate individuals tend to possess higher self-esteem. However, the path from self-esteem to physical activity (–0.03) is slightly negative and non-significant, reinforcing the statistical finding that self-esteem does not have a meaningful influence on physical activity, as shown in the figure below.

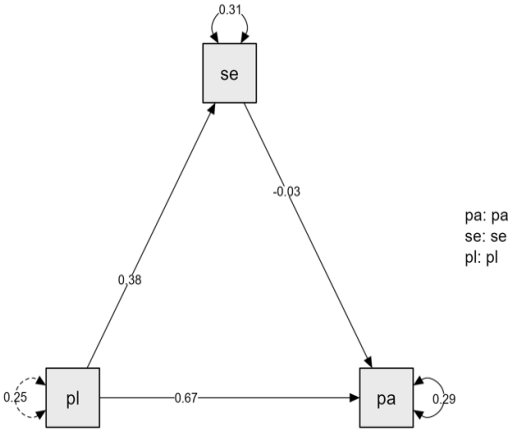

Figure 1. *The Path Plot of Self-esteem as a Mediating Variable on the Relationship between Physical Literacy and Physical Activity of College Students*

Visually, the path plot shows a residual variance of 0.25 for physical literacy, 0.31 for self-esteem, and 0.29 for physical activity. The figure indicates that while physical literacy explains a significant portion of the variation in physical activity, other factors may also contribute. These could include environmental influences, social support, or intrinsic motivation, as suggested by Jefferies et al. (2019) and Ma et al. (2021).

The findings demonstrated that physical literacy is a significant and direct predictor of physical activity among college students, while the mediating influence of self-esteem is not significant. Therefore, initiatives designed to encourage physical activity should emphasize the development of physical literacy, particularly the knowledge, competence, and confidence to move effectively, rather than primarily targeting self-esteem. This supports the perspective of Edwards et al. (2018) and Cairney et al. (2022) that fostering physical literacy lays the groundwork for sustained participation and overall well-being.

The findings is interpreted through Self-Determination Theory (SDT), which links physical literacy to the competence component, reflecting confidence, motivation, and movement skills. The strong direct effect of physical literacy on physical activity indicates that students with higher physical literacy are more likely to engage in physical activity, consistent with SDT's emphasis on competence-fostering intrinsic motivation. While physical literacy modestly influences self-esteem, the indirect effect is negligible, showing that its impact on activity occurs primarily through a direct pathway.

Conclusions

Based on the findings, the following conclusions were drawn: The study concludes that college students possessed a high level of physical literacy, demonstrated strong awareness, confidence, and engagement in physical activities, and their consistent responses indicated a shared understanding of the importance of physical activity for overall well-being, suggesting that most students are well-equipped with the knowledge, motivation, and competence needed to sustain an active and healthy lifestyle. The study concluded that college students demonstrated a moderate level of engagement in physical activity, participating occasionally with moderate intensity but for shorter durations, and the findings indicated that while students recognize the value of being active, consistent and sustained participation remains limited; therefore, promoting regular physical activity through structured programs and motivation strategies is essential to enhance their overall physical activity involvement. The study concluded that college students generally possess a positive self-view, demonstrating confidence and appreciation of their worth and abilities; however, moments of self-doubt and uncertainty still occur among some individuals, underscoring the need for ongoing support and programs that strengthen students' self-esteem and emotional well-being. The study concluded that physically literate students, characterized by confidence, motivation, and movement competence, are more inclined to participate in physical activities and maintain higher self-esteem, and this relationship underscored the vital role of physical literacy in promoting both physical and psychological well-being; hence, enhancing physical literacy among students can lead to a healthier overall well-being and better lifestyles. The study concluded that physical literacy has a direct and significant influence on students' engagement in physical activity, underscoring its role in encouraging active participation and promoting overall health among college students; therefore, developing physical literacy is essential for fostering lifelong active and healthy lifestyles.

Based on the findings and conclusions, the following recommendations were drawn: Since the level of physical literacy among college students is high, it is recommended that higher education institutions sustain and further strengthen physical activity programs through continuous integration of physical literacy concepts in Physical Education courses, and faculty members may adopt experiential and skill-based learning activities that enhance students' motivation, confidence, and competence in movement to ensure objective alignment, while universities may organize sports clinics, intramural competitions, and wellness campaigns to encourage continued physical literacy development and ensure its ongoing implementation. Given that college students' physical activity is moderate, institutions are recommended to implement structured physical activity programs and campus-based fitness initiatives to promote regular participation. The researcher also recommends that Physical Education instructors include endurance, strength, and flexibility training, as well as recreational and community-based sports activities. At the same time, school administrators may encourage active breaks, outdoor exercise, and wellness challenges to promote sustained engagement in physical activity. Since college students' self-esteem is high but shows occasional fluctuations, guidance counselors, in partnership with faculty members, should implement programs that foster positive self-concept, resilience, and confidence through workshops, counseling sessions, and leadership or team-building activities. Given the significant relationships among physical literacy, physical activity, and self-esteem, it is recommended that Physical Education programs adopt a holistic, interdisciplinary approach that nurtures both physical competence and psychological well-being, with collaborative initiatives among the PE Department, Guidance Office, and Student Affairs to promote overall well-being and active lifestyles. Since physical literacy has a direct and significant influence on physical activity, it is recommended that CHED and higher education institutions prioritize the development of physical literacy in curriculum design and implementation to strengthen physical literacy competencies, ensuring that institutions can better promote activities aligned with these initiatives, and that students maintain active, healthy lifestyles beyond the academic setting.

References

Ali, M., Macioszek, E., & Yuen, C. W. (2024). Health Enhancement Through Activity, Travel Participation, and Physical Activity Intensity. Journal of Transport & Health, 39, 101927. https://doi.org/10.1016/j.jth.2024.101927

American College of Sports Medicine. (2018). ACSM's Guidelines for Exercise Testing and Prescription (10th ed.). Lippincott Williams & Wilkins.

American Psychological Association. (2020). Students Experiencing Low Self-Esteem or Low Perceptions of Competence. https://www.apa.org/ed/schools/primer/self-esteem

Atakan, M. M., Li, Y., Koşar, Ş. N., Turnagöl, H. H., & Yan, X. (2021). Evidence-Based Effects of High-Intensity Interval Training on Exercise Capacity and Health: A Review with Historical Perspective. International Journal of Environmental Research and Public Health, 18(13), 7201. https://doi.org/10.3390/ijerph18137201

Bailey, R. (2020). Defining Physical Literacy: Making Sense of a Promiscuous Concept. Sport in Society, 25(1), 1–18. https://doi.org/10.1080/17430437.2020.1777104

Bandura, A. (1997). Self-Efficacy: The Exercise of Control. W.H. Freeman.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles? Psychological Science in the Public Interest, 4(1), 1–44. https://doi.org/10.1111/1529-1006.01431

Bisi, M., Pacini, G., Polman, R., & Stagni, R. (2017). Objective Assessment of Movement Competence in Children Using Wearable Sensors: An Instrumented Version of The TGMD-2 Locomotor Subtest. Gait & Posture, 56, 42–48. https://doi.org/10.1016/j.gaitpost.2017.04.025

Britton, Ú., Belton, S., Peers, C., Issartel, J., Goss, H., Roantree, M., & Behan, S. (2022). Physical Literacy in Children: Exploring The Construct Validity of a Multidimensional Physical Literacy Construct. European Physical Education Review, 1356336X2211312. https://doi.org/10.1177/1356336x221131272

Brunner, M., Keller, U., Dierendonck, C., Reichert, M., Ugen, S., Fischbach, A., & Martin, R. (2010). The Structure of Academic Self-Concepts Revisited: The Nested Marsh/Shavelson Model. Journal of Educational Psychology, 102(4), 964–981. https://doi.org/10.1037/a0019644

Cairney, J., Kiez, T., Roetert, E., & Kriellaars, D. (2019). A 20th-Century Narrative on The Origins of the Physical Literacy Construct. Journal of Teaching in Physical Education, 38(2), 79–83. https://doi.org/10.1123/jtpe.2018-0072

Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical Literacy, Physical Activity, and Health: Toward An Evidence-Informed Conceptual Model. Sports Medicine, 49(3), 371–383. https://doi.org/10.1007/s40279-019-01063-3

Caldwell, H., Di Cristofaro, N., Cairney, J., Bray, S., MacDonald, M., & Timmons, B. (2020). Physical Literacy, Physical Activity, and Health Indicators in School-Age Children International Journal of Environmental Research and Public Health, 17(15), 5367. https://doi.org/10.3390/ijerph17155367

Cale, L., & Harris, J. (2018). The Role of Knowledge and Understanding In Fostering Physical Literacy. Journal of Teaching in Physical Education, 37(3), 280–287. https://doi.org/10.1123/jtpe.2018-0134

Carl, J., Sudeck, G., & Pfeifer, K. (2019). Competencies for a Healthy, Physically Active Lifestyle—Reflections on The Model Of Physical Activity-Related Health Competence (PAHCO). German Journal of Exercise and Sport Research, 49, 1–10. https://doi.org/10.1007/s12662-019-00574-1

Carl, J., Jaunig, J., Schnith, L., Mayer, J., O'Connor, J., & Young, L. (2024). Mapping The "Lifelong Journey" of Physical Literacy: A Biographical Assessment Method for the Physical Activity And Health Context. Sport, Education and Society, 1–15. https://doi.org/10.1080/13573322.2024.2383948

Carl, J., Barratt, J., Wanner, P., Töpfer, C., Cairney, J., & Pfeifer, K. (2022). The Effectiveness of Physical Literacy Interventions: A Systematic Review with Meta-Analysis. Sports Medicine, 52(12). https://doi.org/10.1007/s40279-022-01738-4

Charatcharoenwitthaya, P., Kuljiratitikal, K., Aksornchanya, O., Chaiyasoot, K., Bandidniyamanon, W., & Charatcharoenwitthaya, N. (2021). Moderate-Intensity Aerobic vs Resistance Exercise and Dietary Modification in Patients with Nonalcoholic Fatty Liver Disease: A Randomized Clinical Trial. Clinical and Translational Gastroenterology, 12(3), e00316. https://doi.org/10.14309/ctg.0000000000000316

Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical Literacy, Self-Efficacy, and Physical Activity: A Pathway to Health? Journal of Public Health Research, 8(2), 47–56. https://doi.org/10.4081/jphr.2019.1819

Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: Definitions and distinctions for health-related research. Public Health Reports, 100(2), 126–131. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1424733/

Chen, S., Hammond-Bennett, A., Hypnar, A., & Mason, S. (2020). The Associations Between Physical Activity, Self-Esteem, and Academic Achievement in Children. Journal of School Health, 90(2), 83–90. https://doi.org/10.1111/josh.12860

Choi, S., Sum, R., Leung, E., & Ng, R. (2018). Relationship Between Perceived Physical Literacy and Physical Activity Levels Among Adolescents in Hong Kong. PLOS ONE, 13(8), e0203105. https://doi.org/10.1371/journal.pone.0203105

Cho, M. H. (2016). Preliminary Reliability of the Five-Item Physical Activity Questionnaire. Journal of Physical Therapy Science, 28(12), 3393–3396. https://doi.org/10.1589/jpts.28.3393

Cho, Y., Jang, H., Kwon, S., & Oh, H. (2023). Aerobic, Muscle-Strengthening, and Flexibility Physical Activity and Risks Of All-Cause and Cause-Specific Mortality: A Population-Based Prospective Cohort of Korean Adults. BMC Public Health, 23(1). https://doi.org/10.1186/s12889-023-15969-1

Ciarrochi, J., Heaven, P. C. L., & Davies, F. (2007). The Impact of Hope, Self-Esteem, and Attributional Style on Adolescents' School Grades and Emotional Well-Being: A Longitudinal Study. Journal of Research in Personality, 41(6), 1161–1178. https://doi.org/10.1016/j.jrp.2007.02.001

Corbin, C. B. (2016). Implications of Physical Literacy for Research and Practice: A Commentary. Research Quarterly for Exercise and Sport, 87(1), 14–27. https://doi.org/10.1080/02701367.2016.1124722

Creswell, J. W. (2017). Research design: Qualitative, Quantitative, and Mixed Methods Approach (5th ed.). Sage Publications.Cooney, J. K., Law, R. J., Matschke, V., Lemmey, A. B., Moore, J. P., Ahmad, Y., Jones, J. G., Maddison, P. J., & Thom, J. M. (2011). Benefits of Exercise in Rheumatoid Arthritis. Journal of Aging Research, 2011, 681640. https://doi.org/10.4061/2011/681640

Centers for Disease Control and Prevention. (2022). Physical activity basics. https://www.cdc.gov/physicalactivity/basics/index.htm

Cress, M. E., Büchner, D. M., Prohaska, T., Rimmer, J. H., Brown, M., Macera, C., DiPietro, L., & Chodzko-Zajko, W. (2005). Best Practices for Physical Activity Programs and Behavior Counseling in Older Adult Populations. Journal of Aging and Physical Activity, 13(1), 61–74. https://doi.org/10.1123/japa.13.1.61

Dale, L. P., Vanderloo, L. M., Moore, S. A., & Faulkner, G. E. (2019). Physical Activity and Depression, Anxiety, And Self-Esteem in Children and Youth: An Umbrella Systematic Review. Mental Health and Physical Activity, 16, 66–79. https://doi.org/10.1016/j.mhpa.2018.12.001

De Camargo, E., Piola, T., dos Santos, L., de Borba, E., de Campos, W., & da Silva, S. (2021). Frequency of Physical Activity and Stress Levels Among Brazilian Adults During Social Distancing Due To The Coronavirus (COVID-19): Cross-sectional study. São Paulo Medical Journal, 139(4), 325–330. https://doi.org/10.1590/1516-3180.2020.0706.r1.0802021

Deci, E. L., & Ryan, R. M. (1985). Intrinsic Motivation and Self-Determination in Human Behavior (1st ed.). Springer US. https://doi.org/10.1007/978-1-4899-2271-7

Delas Peñas, J., Norte, D., Maricar, P., Tegero, C., Ann, G., Rosell, J., Nhs, K., Kalilangan, Bukidnon, P., Corresponding, J., Delas Peñas, & Delas, J. (2023). Physical Literacy and Perceived Stress among BPED Students in a State University in the Philippines during the COVID-19 Pandemic. ~ 327 ~ International Journal of Physical Education, Sports and Health, 10(3). https://www.kheljournal.com/archives/2023/vol10issue3/PartE/10-1-84-770.pdf

Di Paula, A., & Campbell, J. D. (2002). Self-Esteem and Persistence in the Face of Failure. Journal of Personality and Social Psychology, 83(3), 711–724. https://doi.org/10.1037/0022-3514.83.3.711

Dishman, R. K., DeJoy, D. M., & Wilson, M. G. (2014). Mediation of the Effects Of Physical Activity on Anxiety Symptoms in College Women: The Role Of Physical Self-Concept and Self-Esteem. Psychology of Sport and Exercise, 15(2), 127–136. https://doi.org/10.1016/j.psychsport.2013.10.003

Dong, Y., Zhang, Y., Zhang, D., Wang, Y., & Gao, Z. (2023). Physical Literacy and Physical Activity Behavior Mediate the Effect of Psychological Distress on Life Satisfaction Among Chinese College Students During the COVID-19 Pandemic. SAGE Open, 13(2). https://doi.org/10.1177/21582440231162503

Edwards, L. C., Bryant, A. S., Keegan, R. J., Morgan, K., & Jones, A. M. (2017). Definitions, foundations, and associations of physical literacy: A systematic review. Sports Medicine, 47(1), 113–126. https://doi.org/10.1007/s40279-016-0560-7

Deci, E. L., & Ryan, R. M. (2000). Self-Determination Theory and The Facilitation of Intrinsic Motivation, Social Development, and Well-Being. American Psychologist, 55(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A Systematic Review of the Psychological and Social Benefits of Participation In Sport For Children And Adolescents: Informing Development of a Conceptual Model of Health Through Sport. International Journal of Behavioral Nutrition and Physical Activity, 10, 98. https://doi.org/10.1186/1479-5868-10-98

Ekkekakis, P., Hartman, M., Ladwig, M., Tenenbaum, G., Eklund, R., & Boiangin, N. (2020). Affective Responses to Exercise. In G. Tenenbaum & R. C. Eklund (Eds.), Handbook of sport psychology (4th ed., pp. 231–253). John Wiley & Sons, Inc. https://doi.org/10.1002/9781119568124.ch12

Elshahat, S., Moffat, T., & Newbold, K. B. (2021). Understanding the Healthy Immigrant Effect in the Context of Mental Health

Challenges: A Systematic Critical Review. Journal of Immigrant and Minority Health, 24(6), 1495–1506. https://doi.org/10.1007/s10903-021-01313-5

Fang, L. (2016). Educational Aspirations of Chinese Migrant Children: The Role of Self-Esteem, Contextual and Individual Influences. Learning and Individual Differences, 50, 195–202. https://doi.org/10.1016/j.lindif.2016.08.009

Filippello, P., Buzzai, C., Sorrenti, L., Costa, S., Abramo, A., & Wang, K. (2019). Italian Version of the Family Almost Perfect Scale: Psychometric Characteristics and Relationships with Academic Engagement, Self-Esteem, and Personal Perfectionism. Applied Developmental Science, 1–13. https://doi.org/10.1080/10888691.2019.1647106

Food and Nutrition Research Institute – Department of Science and Technology. (2019). Expanded National Nutrition Survey: 2019 results (Nutritional status of Filipino adolescents). Food and Nutrition Research Institute – Department of Science and Technology.

Garber, C. E., Blissmer, B., Deschenes, M. R., Franklin, B. A., Lamonte, M. J., Lee, I. M., ... & Swain, D. P. (2011). Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and Neuromotor Fitness in Apparently Healthy Adults. Medicine & Science in Sports & Exercise, 43(7), 1334–1359. https://doi.org/10.1249/MSS.0b013e318213fefb

Gibala, M. J., & Little, J. P. (2010). Just How Much Exercise is Enough? The Case for High-Intensity Interval Training. The Physician and Sports medicine. https://doi.org/10.3810/psm.2010.10.1813

Gråstén, A., Yli-Piipari, S., Huhtiniemi, M., Salin, K., Seppälä, S., & Hakonen, H. (2015). Effectiveness of School-Initiated Physical Activity Program on Secondary School Students' Physical Activity Participation. Journal of School Health, 85(2), 125–134. https://doi.org/10.1111/josh.12228

Greco, A., Annovazzi, C., Palena, N., Camussi, E., Rossi, G., & Steca, P. (2022). Self-Efficacy Beliefs of University Students: Examining Factor Validity and Measurement Invariance of the New Academic Self-Efficacy Scale. Frontiers In Psychology, 12, Article 498824. https://doi.org/10.3389/fpsyg.2021.498824

Global School-based Student Health Survey. (2015). Philippines Fact Sheet. https://extranet.who.int/ncdsmicrodata/index.php/catalog/660/download/4742

Gosbell, S. E., Ayer, J. G., Lubans, D. R., Coombes, J. S., Maiorana, A., Morris, N. R., Tran, D. L., & Cordina, R. L. (2024). Strategies to Overcome Barriers to Physical Activity Participation in Children and Adults Living With Congenital Heart Disease: A Narrative Review. CJC Pediatric and Congenital Heart Disease, 3(4). https://doi.org/10.1016/j.cjcpc.2024.05.002

Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2020). Global Trends in Insufficient Physical Activity Among Adolescents: A Pooled Analysis of 298 Population-Based Surveys With 1.6 Million Participants. The Lancet Child & Adolescent Health, 4(1), 23–35. https://doi.org/10.1016/S2352-4642(19)30323-2

Guo, W. (2023). The Impact of Physical Exercise on College Students' Life Satisfaction: The Mediating Role of Trait Mindfulness and Physical Self-Esteem. Hubei Sports Science, 42, 205–209, 255. https://doi.org/10.26914/c.cnkihy.2023.064967

Guo, Y., Wang, H., Yang, Z., & Hu, L. (2016). The Impact of College Students' Physical Exercise on Physical Self-Esteem: The Mediating Role of Trait Mindfulness. In Proceedings of the 13th National Sports Science Conference - Thematic Report (Sports Psychology Branch). Chinese Society of Sports Science.

Haseler, T., & Haseler, C. (2022). Lack of Physical Activity Is A Global Problem. BMJ, 376, o348. https://doi.org/10.1136/bmj.o348

Hartman, M. (2025, April). The Relationship of Physical Literacy, Motivation, Cognitive Function, and Academic Performance Among Elementary School Children (Doctoral dissertation, Liberty University). https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=7744&context=doctoral

Hayden-Davies, D. (2008, September 4). So what is physical literacy (and what use is it?). Paper presented at the British Educational Research Association annual conference, University of Edinburgh. https://phecanada.ca/sites/default/files/content/docs/resources/Physical_Literacy_Brochure_2010.pdf

Heatherton, T., & Polivy, J. (1991). Development and Validation of a Scale for Measuring Self-Esteem. Journal of Personality and Social Psychology, 60(6), 895–910. https://doi.org/10.1037/0022-3514.60.6.895

Higgs, C. (2010). Physical literacy—Two Approaches, One Concept. Physical and Health Education Canada Journal, Spring, 6–7.

Ho, S. S., Dhaliwal, S. S., Hills, A. P., & Pal, S. (2012). The Effect of 12 Weeks of Aerobic, Resistance, or Combination Exercise Training on Cardiovascular Risk Factors in the Overweight and Obese in A Randomized Trial. BMC Public Health, 12(1). https://doi.org/10.1186/1471-2458-12-704

Honicke, T., Broadbent, J., & Fuller-Tyszkiewicz, M. (2023). The Reciprocal Relationship Between Self-Efficacy and Academic Performance: The Influence of Task Difficulty and Baseline Achievement on Learner Trajectory. Higher Education Research & Development, 42(8), 1–18. https://doi.org/10.1080/07294360.2023.2197194

Janković, M., Sijtsema, J., Haselhorst, C., & Bogaerts, S. (2024). Patterns Of Sports Participation Across the Lifespan and their Links

to Psychopathology, Resilience, And Childhood Trauma: A Cross-Sectional Approach. International Journal of Sport and Exercise Psychology, 1–22. https://doi.org/10.1080/1612197x.2024.2431252

Jefferies, P., Ungar, M., Aubertin, P., & Kriellaars, D. (2019). Physical Literacy and Resilience in Children and Youth. Frontiers in Public Health, 7, 346. https://doi.org/10.3389/fpubh.2019.00346

Johnson, C., Robertson, L., Stults-Kolehmainen, M., & Drake, B. (2016). The Effect of Aerobic Exercise on Stress Reduction Among College Students. Journal of American College Health, 64(1), 12–18.

Jordan, R. T., Smith, P. L., & Lee, A. J. (2018). The Social, Emotional, and Cognitive Effects of Physical Activity. Journal of Sport and Health Education, 22(4), 112–120. https://doi.org/10.1016/j.jshe.2018.04.007

Kabak, S., & Yılmaz, A. (2021). Perceived Physical Literacy Scale for Adolescents (PPLSA): Validity and Reliability Study. International Journal of Education and Literacy Studies, 9(1), 159–171.

Keegan, R., Keegan, S., Daley, S., Ordway, C., & Edwards, A. (2013). Getting Australia Moving: Establishing a Physically Literate, Active Nation (Game Plan). University of Canberra.

Killingbeck, M., Bowler, M., Golding, D., & Gammon, P. (2007). Physical Education and Physical Literacy. Physical Education Matters, 2, 20–24.

Kohl, H., & Cook, H. (2013). Physical Activity, Fitness, and Physical Education: Effects on Academic Performance. National Academies Press (US). https://www.ncbi.nlm.nih.gov/books/NBK201501/

Kucukibis, H., & Gul, M. (2019). The Relationship Between Attitudes Toward Physical Activity and Self-Esteem in High School Students. Asian Journal of Education and Training, 5, 70–73. https://doi.org/10.20448/journal.522.2019.51.70.73

Kwiecień-Jaguś, K., Mędrzycka-Dąbrowska, W., Kopeć, M., Piotrkowska, R., Czyż-Szypenbejl, K., Hansdorfer-Korzon, R., Lemska, M., & Jarzynkowski, P. (2021). Level and factors associated with physical activity among university teachers: an exploratory analysis. BMC Sports Science, Medicine and Rehabilitation, 13(1). https://doi.org/10.1186/s13102-021-00346-5

Lee, Y., Huang, Y., & Kao, Y. (2005). Physical activities and correlates of clinical nurses in Taipei municipal hospitals. The Journal of Nursing Research, 13(4), 281–292.

Lim, Y., & Lee, O. (2017). Relationships between parental maltreatment and adolescents' school adjustment: Mediating roles of self-esteem and peer attachment. Journal of Child and Family Studies, 26(2), 393–404. https://doi.org/10.1007/s10826-016-0573-8

Lindwall, M., Asci, H., & Crocker, P. (2014). The physical self in motion: Within-person change and associations of change in self-esteem, physical self-concept, and physical activity in adolescent girls. Journal of Sport and Exercise Psychology, 36(6), 551–563. https://doi.org/10.1123/jsep.2013-0258

Liu, M., Wu, L., & Ming, Q. (2015). How does physical activity intervention improve self-esteem and self-concept in children and adolescents? Evidence from a meta-analysis. In J. L. Wallander (Ed.), PLoS One, 10(7), e0134804. https://doi.org/10.1371/journal.pone.0134804

Loes, C. N. (2022). The effect of collaborative learning on academic motivation. Teaching and Learning Inquiry, 10(1). https://doi.org/10.20343/teachlearninqu.10.4

Lubans, D., Morgan, P., Cliff, D., Barnett, L., & Okely, A. (2010). Fundamental movement skills in children and adolescents: Review of associated health benefits. Sports Medicine, 40(9), 1019–1035. https://doi.org/10.2165/11536850-000000000-00000

Lu, H., Saenz, F., Raju, P., Gutierrez, E. N., Chew, S. A., & Nair, S. (2025). The Effects of Moderate-Intensity Physical Exercise and Yoga Interventions on Stress in Hispanic College Students: A Pilot Study. Sports, 13(8), 266. https://doi.org/10.3390/sports13080266

Lu, J. (2025). Physical Activity of College Students in A Small Southern City During the Pandemic. Journal of Healthy Eating and Active Living, 5(1), 97. https://pmc.ncbi.nlm.nih.gov/articles/PMC11887924

Ma, R., Sum, R., Li, H., Huang, Y., & Niu, X. (2020). Association between physical literacy and physical activity: A multilevel analysis study among Chinese undergraduates. International Journal of Environmental Research and Public Health, 17, 7874. https://doi.org/10.3390/ijerph17217874

Ma, R., Sum, R., Hu, Y., & Gao, T. (2020). Assessing factor structure of the simplified Chinese version of the Perceived Physical Literacy Instrument for undergraduates in Mainland China. Journal of Exercise Science & Fitness, 18, 68–73. https://doi.org/10.1016/j.jesf.2020.01.001

Ma, R., Sum, R., Hu, Y., Gao, T., & Niu, X. (2021). Relationship among physical literacy, mental health, and resilience in college students. Frontiers in Psychiatry, 12, 767804. https://doi.org/10.3389/fpsyt.2021.767804

MacIntosh, B. R., Murias, J. M., Keir, D. A., & Weir, J. M. (2021). What is moderate to vigorous exercise intensity? Frontiers in Physiology, 12, 682233. https://doi.org/10.3389/fphys.2021.682233

Maddux, J. E. (2016). Self-efficacy. In J. Johnson & R. Wood (Eds.), The Wiley handbook of positive clinical psychology (pp. 89–101).

Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of physical activity on mental health and well-being: A review. Cureus, 15(1). https://pmc.ncbi.nlm.nih.gov/articles/PMC9902068/

Marsh, H. W., Trautwein, U., Lüdtke, O., Koller, O., & Baumert, J. (2006). Integration of multidimensional self-concept and core personality constructs: Construct validation and relations to well-being and achievement. Journal of Personality, 74(2), 403–456. https://doi.org/10.1111/j.1467-6494.2005.00380.x

Martins, L., Lopes, M., Diniz, C., & Guedes, N. (2021). The factors related to a sedentary lifestyle: A meta-analysis review. Journal of Advanced Nursing, 77, 1188–1205.

Maude, P. (2010). Physical literacy and the young child. In M. Whitehead (Ed.), Physical literacy: Throughout the life course (pp. 100–115). Routledge.

Moxley, E., Webber-Ritchey, K., & Hayman, L. (2022). The Global Impact of Physical Inactivity and Its Implications for Public Health Nursing. Public Health Nursing, 39, 180–188. https://doi.org/10.1111/phn.12958

Matt, A. (2023). Exercise adherence in the modern world. Fell Top Wellbeing. https://felltopwellbeing.co.uk/2023/07/29/exercise-adherence-in-themodern-world

Niveau, N., New, B., & Beaudoin, M. (2021). Self-esteem interventions in adults – A systematic review and meta-analysis. Journal of Research in Personality, 94, 104131. https://doi.org/10.1016/j.jrp.2021.104131

Nock, N. L., Ievers-Landis, C. E., Dajani, R., Knight, D., Rigda, A., Narasimhan, S., & Uli, N. (2016). Physical activity self-efficacy and fitness: Correlates of family environment relationships and self-esteem as a mediator among adolescents who are overweight or obese. Childhood Obesity, 12(5), 360–367. https://doi.org/10.1089/chi.2016.0007

Olsen, N. R., & Torrance, N. (Eds.). (2009). The Cambridge handbook of literacy (pp. 59–74). Cambridge University Press.

O'Sullivan, M., Davids, K., Woods, C., Rothwell, M., & Rudd, J. (2020). Conceptualizing physical literacy within an ecological dynamics' framework. Quest, 72(4), 448–462. https://doi.org/10.1080/00336297.2020.1799828

Orth, U., Robins, R. W., Widaman, K. F., & Conger, R. D. (2014). Is low self-esteem a risk factor for depression? Findings from a longitudinal study of Mexican-origin youth. Developmental Psychology, 50(2), 622–633. https://doi.org/10.1037/a003381

Ozsaker, M., Dorak, F., & Vurgun, N. (2012). Self-esteem, physical activity, and sedentary lifestyle are associated with physical performance among Turkish elementary school children. HealthMED, 6(5), 1636–1642.

Öztürk, Ö., Aydoğdu, O., Kutlutürk Yıkılmaz, S., Feyzioğlu, Ö., & Pişirici, P. (2023). Physical Literacy as a Determinant of Physical Activity Level among Late Adolescents. PLOS ONE, 18(4), e0285032. https://doi.org/10.1371/journal.pone.0285032

Patalen, C. F., Ikeda, N., Angeles-Agdeppa, I., Vargas, M. B., Nishi, N., Duante, C. A., & Capanzana, M. V. (2020). Data resource profile: The Philippine National Nutrition Survey (NNS). International Journal of Epidemiology, 49(3), 742–743f. https://doi.org/10.1093/ije/dyaa045

Pajares, F. (2006). Self-efficacy beliefs in academic settings. Review of Educational Research, 66(4), 543–578.

Pan, M., Ying, B., Lai, Y., & Kuan, G. (2022). Status and Influencing Factors of Physical Exercise among College Students in China: A Systematic Review. International Journal of Environmental Research and Public Health, 19(20), 13465. https://doi.org/10.3390/ijerph192013465

Piercy, K. L., Troiano, R. P., Ballard, R. M., Carlson, S. A., Fulton, J. E., Galuska, D. A., & Olson, R. D. (2018). The Physical Activity Guidelines for Americans. JAMA, 320(19), 2020–2028. https://doi.org/10.1001/jama.2018.14854

Purgato, M., Richards, J., Prina, E., Kip, A., Del Piccolo, L., Michencigh, G., Rimondini, M., Rudi, D., Vitali, F., Cart, M.G., Morina, N., Schena, F., & Barbui, C. (2021). Efficacy Of Physical Activity Interventions On Psychological Outcomes In Refugee, Asylum Seeker, And Migrant Populations: A Systematic Review And Meta-Analysis. Psychology of Sport & Exercise, 54, 1–10. https://doi: 10.1016/j.psychsport.2021.10190

Regehr, C., Glancy, D., & Pitts, A. (2013). Interventions To Reduce Stress In University Students: A Review And Meta-Analysis. Journal of Affective Disorders, 148(1), 1–11. https://doi.org/10.1016/j.jad.2012.11.026

Regis, M., Oliveira, L., Santos, A., Leonidio, A., Diniz, P., & Freitas, C. (2016). Urban Versus Rural Lifestyle In Adolescents: Associations Between Environment, Physical Activity Levels, And Sedentary Behavior. Einstein, 14(4), 461–467. https://doi.org/10.1590/S1679-45082016AO3717

Rentzsch, K., Wenzler, M., & Schütz, A. (2016). The Structure Of Multidimensional Self-Esteem Across Age And Gender. Personality and Individual Differences, 88, 139–147. https://doi.org/10.1016/j.paid.2015.09.012

Rhodes, R. E., Janssen, I., Bredin, S. S. D., Warburton, D. E. R., & Bauman, A. (2017). Physical activity: Health Impact, Prevalence, Correlates, And Interventions. Psychology & Health, 32(8), 942–975. https://doi.org/10.1080/08870446.2017.1325486

Rosenberg, M. (1965). Society And The Adolescent Self-Image. Princeton University Press.

Rudd, J. R., Pesce, C., Strafford, B. W., & Davids, K. (2020). Physical literacy – A Journey Of Individual Enrichment: An Ecological Dynamics Rationale For Enhancing Performance And Physical Activity In All. Frontiers in Psychology, 11, 1904. https://doi.org/10.3389/fpsyg.2020.01904

Rzewnicki, R., Auweele, Y. V., & De Bourdeaudhuij, I. (2003). Addressing Over-Reporting On The International Physical Activity Questionnaire (IPAQ) telephone survey with a population sample. Public Health Nutrition, 6(3), 299–305. https://doi.org/10.1079/PHN2002427

She, X., Gao, T., Ma, R. S., Tang, D., Zhong, H., & Dong, H. (2023). Relationship Among Positive Self-Esteem, Physical Literacy, And Physical Activity In College Students: A study of a mediation model. Frontiers in Psychology, 14, 1097335. https://doi.org/10.3389/fpsyg.2023.1097335

Shearer, C., Goss, H. R., Edwards, L. C., Keegan, R. J., Knowles, Z. R., Boddy, L. M., Durden-Myers, E. J., & Foweather, L. (2018). How Is Physical Literacy Defined? A Contemporary Update. Journal of Teaching in Physical Education, 37(3), 237–245. https://doi.org/10.1123/jtpe.2018-0136

Sherrington, C., Tiedemann, A., Fairhall, N., Close, J. C., & Lord, S. R. (2017). Exercise To Prevent Falls In Older Adults: An Updated Systematic Review And Meta-Analysis. British Journal of Sports Medicine, 51(24), 1750–1758. https://doi.org/10.1136/bjsports-2016-096547

Sirin, S., & Rogers-Sirin, L. (2015). Exploring School Engagement Of Middle-Class African American Adolescents. Youth & Society, 35, 323–340. https://doi.org/10.1177/0044118X03255006

Slevitch, L. (2011). Qualitative and Quantitative Methodologies Are Compared In Terms Of Ontological And Epistemological Perspectives. Journal of Quality Assurance in Hospitality & Tourism, 12(1), 73–81. https://doi.org/10.1080/1528008X.2011.541810

Smith, A., Hoelzle, J., & Kirwan, R. (2017). Aerobic Exercise And Stress Reduction: A Meta-Analysis Of Randomized Controlled Trials. Psychology of Sport and Exercise, 33, 37–45. https://doi.org/10.1016/j.psychsport.2017.07.010

Sowislo, J. F., & Orth, U. (2013). Does Low Self-Esteem Predict Depression And Anxiety? A Meta-Analysis Of Longitudinal Studies. Psychological Bulletin, 139(1), 213–240. https://doi.org/10.1037/a0028931

Spence, J. C., McGannon, K. R., & Poon, P. (2005). The Effect Of Exercise On Global Self-Esteem: A quantitative review. Journal of Sport & Exercise Psychology, 27(3), 311–334. https://doi.org/10.1123/jsep.27.3.311

Spengler, J., & Cohen, J. (2015). Physical literacy: A Global Environmental Scan. Washington, DC: Aspen Institute Sports & Society Program.

Sum, R. K. W., Ha, A. S. C., Cheng, C. F., Chung, P. K., Yiu, K. T. C., Kuo, C. C., Yu, C. K., & Wang, F. J. (2016). Construction And Validation Of A Perceived Physical Literacy Instrument For Physical Education Teachers. PLOS ONE, 11(5), e0155610. https://doi.org/10.1371/journal.pone.0155610

Sum, R. K., Lau, P. W., & Kong, P. W. (2018). Perceived Physical Literacy Instrument For Adolescents: A Further Validation Of PPLI. Journal of Exercise Science & Fitness, 16(1), 26–31. https://doi.org/10.1016/j.jesf.2018.03.002

Sun, C., & Zhang, G. (2020). Effects Of Physical Activity On Adolescents' Interpersonal Competence: The Chain-Mediated Effects Of Physical And Overall Self-Esteem. Chinese Journal of Sports Medicine, 39(01), 47–52.

Supple, A., Su, J., Plunkett, S., Peterson, G., & Bush, K. (2013). Factor Structure Of The Rosenberg Self-Esteem Scale. Journal Of Cross-Cultural Psychology, 44(5), 748–764. https://doi.org/10.1177/0022022112468942

Swann, W., Chang-Schneider, C., & Larsen, M. (2007). Do people's self-views matter? Self-concept and Self-Esteem in Everyday Life. American Psychologist, 62(2), 84–94. https://doi.org/10.1037/0003-066X.62.2.84

Swift, D. L., Johannsen, N. M., Lavie, C. J., Earnest, C. P., & Church, T. S. (2014). The Role Of Exercise And Physical Activity In Weight Loss And Maintenance. Progress in Cardiovascular Diseases, 56(4), 441–447. https://doi.org/10.1016/j.pcad.2013.09.012

Taş, H., & Hürmeriç, I. (2021). Evaluation Of Physical Literacy In Secondary School Students. TED EĞİTİM ve BİLİM. https://doi.org/10.15390/eb.2021.9907

Thivel, D., Tremblay, A., Genin, P., Panahi, S., Rivière, D., & Duclos, M. (2018). Physical Activity, Inactivity, And Sedentary Behaviors: Definitions And Implications In Occupational Health. Frontiers in Public Health, 6, 288. https://doi.org/10.3389/fpubh.2018.00288

Tinto, V. (1975). Dropout From Higher Education: A Theoretical Synthesis Of Recent Research. Review of Educational Research,

45(1), 89–125. https://doi.org/10.3102/00346543045001089

Tremblay, M., Costas-Bradstreet, C., Barnes, J., Bartlett, B., Dampier, D., Lalonde, C., et al. (2018). Canada's Physical Literacy Consensus Statement: Process and outcome. BMC Public Health, 18, 1–18. https://doi.org/10.1186/s12889-018-5903-6

Torres, R., & Poralan, P. (2024). Perceived Physical Literacy And Exercise Adherence Of College Students: Basis For An Intervention Plan. Psychology and Education, 2024(2), 218–232. https://doi.org/10.5281/zenodo.14602639

United Nations Educational, Scientific, and Cultural Organization (UNESCO). (2015). Quality Physical Education: Guidelines for Policymakers. UNESCO.

Von Soest, T., Wichstrøm, L., & Kvalem, I. L. (2016). The Development of Global and Domain-Specific Self-Esteem From Age 13 to 31. Journal of Personality and Social Psychology, 110(4), 592–608. https://doi.org/10.1037/pspp0000060

Wang, H., Lee, K. S., & Stodden, D. F. (2020). Relationships Between Perceived Physical Literacy and Mental Health in College Students: A scoping review. BMC Public Health, 20, 1681. https://doi.org/10.1186/s12889-020-09706-4

Wang, C. (2022). The Role of Physical Activity In Promoting Thinking Skills and Emotional Behavior of Preschool Children. Psicologia: Reflexão e Crítica, 35(1). https://doi.org/10.1186/s41155-022-00223-1

Whitehead, M., Durden-Myers, E., & Pot, N. (2018). The Value of Fostering Physical Literacy. Journal of Teaching in Physical Education, 37, 252–261.

Whitehead, M. (2006). The Concept of Physical Literacy. European Journal of Physical Education, 6(2), 127–138. https://doi.org/10.1080/1740898010060205

Whitehead, M. (2010). Physical Literacy. Routledge. https://books.google.com.ph/books?hl=en&lr=&id=2GN6AgAAQBAJ&oi=fnd&pg=PP1&dq=Whitehead+M

World Health Organization. (2019). Insufficient Physical Activity. https://www.who.int/data/gho/data/themes/topics/indicatorgroups/indicator-group-details/GHO/insufficient-physical-activity

World Health Organization. (2020). WHO guidelines on physical activity and sedentary behaviour. https://www.who.int/publications/i/item/9789240015128

World Health Organization. (2022). Physical activity. https://www.who.int/news-room/fact-sheets/detail/physical-activity

World Health Organization. (2010). Global Recommendations On Physical Activity for health. https://www.who.int/publications/i/item/9789241599979

Xu, D. (2019). Medical Guidance of College Students' Health Cognition. Health Vocational Education, 16, 50–51.

Zhang, L., & Sun, X. M. (2009). The Impact Of Physical Exercise on College Students' Physical Self-Esteem and General Self-Efficacy. Journal of Tianjin University of Sport, 24, 172–174.

Zwinkels, M., Verschuren, O., Balemans, A., Lankhorst, K., Velde, S., van Gaalen, L., de Groot, J., Visser-Meily, A., & Takken, T. (2018). Effects Of a School-Based Sports Program on Physical Fitness, Physical Activity, and Cardiometabolic Health in Youth with Physical Disabilities: Data from the Sport-2-Stay-Fit Study. Frontiers in Pediatrics, 6, Article 75. https://doi.org/10.3389/fped.2018.00075

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. Contemporary Educational Psychology, 25(1), 82–91. https://doi.org/10.1006/ceps.1999.1016.

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