i-Core: International Journal of Sport Science

Volume 1 Number 2 (2025)

https://jurnal.stokbinaguna.ac.id/index.php/i-Core

The Contribution of Physical Literacy in Physical Fitness among Different Age Groups

Andi Helmy Ishak [1] *

[1] Universitas Muhammadiyah Bulukumba, South Sulawesi, Indonesia
* Corresponding Author: andihemyishak1993@gmail.com

Abstract: The current decline in physical fitness levels across various age groups poses a serious challenge to global public health. Efforts to improve fitness often focus solely on physical exercise, without considering the underlying psychological and cognitive foundations. This study aims to analyse the contribution of physical literacy components including motivation, self-confidence, and physical competence to an individual's level of physical fitness. This study employs a quantitative descriptive approach using a survey method. Data were collected through a standardized physical literacy assessment instrument and field physical fitness tests. The sample was selected using purposive sampling to obtain a representative picture of various age groups. Data analysis was conducted using correlation and linear regression tests to determine the extent to which physical literacy influences fitness status. Key findings indicate that physical literacy has a significant influence and is positively correlated with physical fitness. Individuals with high physical literacy demonstrate more consistent participation in routine physical activities. Motivation and self-confidence act as key drivers in maintaining physical engagement, which ultimately impacts improvements in fitness components such as cardiorespiratory endurance and muscle strength. Physical literacy is not merely a motor skill but an essential prerequisite for achieving a sustainable healthy lifestyle. Curriculum transformations in physical education and community sports programs must prioritize the development of physical literacy to foster a holistically fit society.
Keywords: Physical Literacy, Physical Fitness, Different Age Groups

Introduction

The physical fitness of the global community, including in Indonesia, is currently at a worrying point, with a significant downward trend in physical activity across all age groups. Advances in digital technology and job automation have created a sedentary lifestyle that is slowly eroding the basic physical abilities and endurance of modern humans. This phenomenon is not simply an individual health issue, but a systemic challenge that increases the risk of non-communicable diseases such as obesity, diabetes, and hypertension. Many health experts and sports practitioners are beginning to question the effectiveness of conventional fitness programs currently implemented in schools and the general public. Despite the widespread availability of various sports facilities, the rate of active participation in measurable physical activity still shows a

disappointing trend. This indicates a disconnect between the provision of physical facilities and the awareness and internal desire to exercise consistently. Therefore, a reorientation of understanding is needed regarding what truly motivates individuals to want and maintain lifelong physical fitness.

The main problem in developing physical fitness today lies in the program's focus, which tends to be too mechanistic and solely focused on physical results. Most physical education curricula and sports training programs still emphasize performance achievements, such as muscle strength or cardiovascular endurance, without addressing the psychological aspects of the subject. This rigid approach often leaves individuals feeling burdened, bored, or even a sense of failure if they don't meet certain physical standards set by instructors. As a result, many people stop exercising soon after the formal program ends or when extrinsic motivations, such as grades or weight goals, are achieved. This neglect of the mental, emotional, and motivational aspects creates a significant gap in the sustainability of active lifestyles in society. Without a strong emotional attachment and cognitive understanding of movement activities, physical fitness will only be a temporary achievement that is difficult to maintain in the long term. This is a crucial point where the concept of physical literacy must emerge as a solution to bridge the gap between physical ability and an individual's psychological will.

Physical literacy has emerged as a new paradigm that redefines the human relationship with physical activity as a lifelong journey. This concept is not simply a technical term for motor skills, but rather a holistic integration that encompasses the affective, cognitive, and physical domains in a continuous manner. In the affective domain, physical literacy builds self-confidence and intrinsic motivation, making a person feel comfortable and happy when engaging in any physical activity. Cognitively, individuals with good physical literacy will understand the benefits, rules, and principles of safe and effective movement for their own bodies. Meanwhile, in the physical domain, this literacy manifests itself in basic movement competencies that enable a person to respond agilely to various environmental challenges. These three domains interact to shape a person's physical identity, so that they no longer view exercise as an obligation but rather as an integral part of their self-existence. By understanding physical literacy as a dynamic journey, we recognize that each individual has a different pace and path of development in achieving optimal health.

The affective aspect of physical literacy is often the key differentiator between chronically active individuals and those who tend to be passive or reluctant to move. The self-confidence that grows from mastering basic movement skills will foster the courage to try new types of physical activity without fear of negative judgment. Strong motivation, both intrinsic and extrinsic, serves as psychological fuel that maintains an individual's consistency even in difficult or tiring situations. Conversely, individuals who have had traumatic experiences or feel incompetent in sports tend to shy away from physical activity to avoid embarrassment. Physical literacy seeks to heal this relationship by instilling the value that every movement has meaning and that everyone has the potential to become the best version of themselves physically. By strengthening this mental aspect, the psychological barriers that have been a major barrier to improving physical fitness can be significantly reduced. Therefore, building the will to move is far more important than simply forcing movement in the initial stages of developing a healthy lifestyle.

The cognitive domain of physical literacy also plays a vital role as a navigator, directing how physical activity is performed correctly and responsibly. Knowledge of how the body works, the importance of nutrition, and an understanding of injury management are aspects of physical literacy often overlooked in traditional exercise instruction. Cognitively literate individuals are able to design independent fitness strategies tailored to their unique needs and physical conditions. They don't simply follow exercise trends

but are able to evaluate which activities will have a long-term positive impact on their mental and physical health. This cognitive awareness also encompasses an understanding of the social responsibilities of exercise, such as sportsmanship and teamwork, which enrich an individual's social experience. Thus, physical literacy creates individuals who are intelligent in movement, capable of making informed health decisions, and possess sound information literacy regarding fitness. This clarity of purpose and understanding of methods will ensure that the fitness achieved is based on a strong scientific foundation, not merely intuition or coercion.

The integration of the affective, cognitive, and physical domains in physical literacy will automatically lead to more stable and meaningful improvements in physical fitness. The physical competencies acquired through physical literacy provide individuals with the tools to engage in various forms of physical activity with high efficiency and low risk of injury. When people feel capable and know how to move, they tend to do it more frequently, which physiologically stimulates the body's adaptation to physical workload. This voluntary increase in the volume and intensity of physical activity is key to achieving fitness parameters such as aerobic capacity and muscle strength. The reciprocal relationship between physical literacy and physical activity creates a positive cycle where success in movement continues to increase motivation to stay active. This proves that physical literacy is not merely a supplement, but rather the primary driving force that ensures physical fitness is not just a statistical goal, but a quality of life. Communities with high physical literacy are more physically resilient, supported by mature mental awareness and competent movement skills.

Based on this background, there is an urgency to further investigate the significance of physical literacy in the context of achieving physical fitness in Indonesia. The fundamental question that needs to be answered is the extent to which the components of physical literacy particularly motivation, self-confidence, and physical competence are accurate predictors of individual fitness. To date, many assumptions have been circulating, but there is still little empirical data supporting a direct link between physical literacy scores and objective fitness status in the field. Understanding this relationship is crucial for educators, coaches, and policymakers to formulate more effective and humane intervention strategies to improve public health. If physical literacy proves to be a key variable, then the paradigm of sports development must immediately shift from an outcome-oriented approach to one that is process-oriented and individual empowerment. Through this research, it is hoped that strong scientific evidence will be found to position physical literacy as a key instrument in transforming the national fitness system towards a more active and healthy society.

Method

This study used a quantitative approach with a correlational design to uncover the causal relationship between physical literacy and physical fitness levels. The population in this study focused on university students in the physical education study program, who were considered to have representative variations in physical activity levels. The sample was selected using a purposive sampling technique to ensure that the subjects met the inclusion criteria, such as good physical health and willingness to participate in the entire test series. The study location was centered in the university's sports laboratory and athletic facilities to ensure consistent environmental control during data collection. This design was chosen because of its effectiveness in mapping the relationship patterns between variables without providing treatment or manipulation to the study subjects. The researcher also considered demographic aspects such as age and gender to provide a more comprehensive picture of the physical literacy profile of the respondents. The data collection procedure was designed in such a way as not to disrupt students' academic

schedules while maintaining the objectivity of the measurement results. With this structured design, it is hoped that the research results can be generalized to populations with similar characteristics in other regions. Overall, this methodology aims to provide strong empirical evidence regarding the position of physical literacy as a predictor of fitness.

Research instruments are crucial for data validity, so researchers adopted internationally standardized instruments adapted to the local context. To measure physical literacy, this study used the validated Canadian Assessment of Physical Literacy (CAPL-2), adapted to the characteristics of respondents in Indonesia. This instrument not only measures motor skills but also includes a psychological questionnaire to assess motivation, self-confidence, and cognitive knowledge regarding physical activity. Specifically for the motivation and self-perception aspects, researchers also integrated the Play-Self scale to obtain more in-depth data on the subjects' emotional involvement in exercise. Meanwhile, physical fitness variables were measured using field physical tests that included components of cardiorespiratory endurance, muscle strength, and flexibility. The use of this standardized measurement tool aims to minimize measurement bias and ensure that all collected data can be scientifically compared. All instruments underwent expert validity testing and Cronbach's alpha reliability testing before being applied to the actual research sample. The data collection process was carried out by a team of data collectors who received special training to standardize instruction procedures for respondents. Through this combination of multidimensional instruments, researchers can capture a holistic picture of physical literacy from both mental and physical perspectives.

The data analysis technique in this study was carried out through several rigorous statistical stages to ensure the accuracy of the conclusions drawn. After the data was collected, the first step was to conduct classical assumption tests, including normality, linearity, and heteroscedasticity tests, as the main requirements for using parametric statistics. Descriptive analysis was used to provide an overview of the distribution of physical literacy scores and the average physical fitness level in the study sample. Next, to answer the problem formulation regarding the strength of the relationship between variables, the researcher applied the Pearson Product Moment Correlation technique. The analysis continued with a simple linear regression test to determine the contribution or predictive power of physical literacy to physical fitness variance. The researcher also conducted additional analysis in the form of multiple regression to examine the specific contribution of each sub-component of physical literacy, such as motivation or physical competence, independently. All statistical calculations were processed using the latest version of SPSS software to ensure the accuracy of the significant figures and the resulting coefficient values. The interpretation of the analysis results was carried out by referring to the significance level of $p < 0.05$ to determine whether the research hypothesis was accepted or rejected. With this multi-layered analysis procedure, the research is expected to be able to present findings that are credible and methodologically accountable.

Results & Discussion

Results

Based on data collected from the entire sample, a general picture was found showing significant variations in physical literacy levels among respondents. Descriptive analysis indicated that the majority of individuals with high physical literacy scores also demonstrated superior performance on various physical fitness test instruments. Statistically, the data distribution suggests that motivation and self-confidence contribute to an individual's initial readiness to face physical challenges. Respondents with a strong

cognitive understanding of the importance of physical activity tended to be more disciplined in following the testing protocol provided by the research team. This was evident in the consistency of results achieved on each test item, with no drastic decline in performance due to mental fatigue or lack of interest. The collected raw data were then converted into standardized scores to facilitate comparisons between variables with different characteristics. These initial findings provided a strong foundation for researchers to proceed with a more in-depth correlation analysis to examine the specific relationships between variables. Through field observations, it was clear that physically literate individuals had better movement efficiency than those with low literacy scores. This phenomenon serves as an early indicator that physical literacy is indeed closely related to the physical output produced by the human body. Pearson Product Moment correlation analysis revealed a very strong and significant positive relationship between the total physical literacy score and aerobic capacity, as measured by the VO_2 Max value. Individuals in the top quartile of physical literacy scores consistently recorded higher maximal oxygen consumption capabilities than their peers. This relationship suggests that physical literacy acts as a catalyst, encouraging individuals to engage in cardiorespiratory endurance activities regularly and independently. The high VO_2 Max values in this group were not the result of a single bout of exercise, but rather the accumulation of movement habits based on a mature understanding of physical literacy. The data showed that intrinsic motivation in physical literacy correlated linearly with the duration and intensity of cardiovascular exercise undertaken by respondents each week. The higher a person's level of physical literacy, the greater their tendency to maintain an effective training zone for developing the body's aerobic system. These findings confirm that optimal cardiorespiratory fitness cannot be achieved without strong mental support to endure physical fatigue. Thus, physical literacy can be viewed as a key predictor of an individual's future cardiorespiratory health. The sharpness of this data provides empirical evidence that interventions in the literacy aspect will have a direct impact on improving physical quality in a systemic manner.

In addition to endurance, the study also showed a direct correlation between physical literacy levels and muscle strength components, as measured through static and dynamic strength tests. Respondents with high physical competence within the physical literacy framework tended to have more precise and effective weight-lifting techniques during strength tests. Better muscle strength in physically literate individuals is influenced by the central nervous system's ability to optimally recruit motor units due to regular movement habits. Statistical data shows that the self-confidence component of physical literacy impacts an individual's courage to exert maximum effort during strength measurements. Without sufficient self-confidence, individuals often feel doubtful or afraid of injury, resulting in an inaccurate measurement of their true muscle strength potential. Researchers found that individuals who cognitively understand the principles of movement mechanics are able to apply their strength with a significantly lower risk of injury. This link between physical literacy and muscle strength demonstrates that holistic body mastery facilitates the development of more functional muscle tissue. It also reflects that physical literacy helps individuals develop a love for weight training as part of long-term body function maintenance. Regression results indicate that every one-point increase in physical literacy scores is accompanied by a statistically significant increase in muscle strength scores.

The body flexibility component also demonstrates a significant correlation with the level of physical literacy among the respondents in this study. Field data confirms that individuals with good physical literacy tend to have a wider range of joint motion and proportionally better maintained muscle elasticity. This phenomenon is closely related to the behavior of literate individuals who consistently include stretching and warm-up sessions as an integral part of their physical routine. A cognitive understanding of the

importance of maintaining joint mobility makes them more aware of the risk of muscle stiffness resulting from a sedentary lifestyle common in modern society. In the sit and reach test, respondents with high physical literacy scores dominated the "very good" category by a significant margin over the other groups. This good flexibility also indicates that these individuals possess refined body control and are able to coordinate movements harmoniously under various stresses. Researchers note that body awareness, an integral part of physical literacy, significantly assists individuals in recognizing their own physical limits. By maintaining flexibility, physically literate individuals indirectly build their body's defenses against various common musculoskeletal disorders. Correlation analysis shows a significant relationship between these two variables, strengthening physical literacy's role in maintaining comprehensive fitness.

Overall, the integration of test results indicates that physical literacy is a crucial determinant in developing a complete physical fitness profile. No individuals with low physical literacy scores were found to be able to sustainably achieve exceptional levels of physical fitness. This demonstrates that even if someone has good genetic physical potential, without the support of physical literacy, that potential will not be actualized into stable fitness. This research data successfully establishes a relationship pattern in which physical literacy acts as an upstream that flows motivational energy into the estuary of actual physical activity. This finding invalidates the long-held assumption that physical fitness is simply a matter of repetitive physical exercise without requiring the involvement of an individual's intellectual and emotional aspects. The statistical significance found across all physical fitness parameters from VO2 Max, strength, to flexibility legitimizes the importance of physical literacy. Researchers observe that physical literacy creates a "health shield" that keeps individuals fit even in environments that do not support physical activity. The respondents' success in consistently achieving high fitness scores is a manifestation of the maturity of physical literacy that they have consciously developed. In closing this results section, it can be emphasized that investing in physical literacy is the most effective way to ensure permanent physical fitness of the community.

Discussion

A thorough analysis of research data reveals that individuals who are physically literate, or possess a high level of physical literacy, tend to exhibit much more stable and consistent exercise behaviour patterns. This occurs because they no longer view physical activity as a burden or external obligation to meet certain standards set by others. Instead, their engagement in physical activity is rooted in a deep understanding of how the body works and what it needs to maintain optimal function. This consistency is a manifestation of the harmonious integration of strong physical abilities with a mature mental awareness in facing various daily challenges. They possess a kind of "internal compass" that consistently directs them to seek out opportunities to move, even amidst busy routines. This mental resilience prevents them from easily succumbing to laziness or situational obstacles that often deter others. Thus, physical literacy creates a sense of independence in exercise that no longer relies on the instructions of a coach or the supervision of a physical education teacher. Their focus has shifted from the end result to the enjoyment of the movement itself, as part of their identity.

The advantage of physically literate individuals lies in their mastery of the cognitive domain, which enables them to understand the long-term benefits of every movement. They don't exercise simply because they follow trends or social pressure, but because they possess sound health literacy regarding the physiological impacts of physical activity on the body. This knowledge encompasses energy management, muscle recovery, and the importance of maintaining nutritional balance to support their daily physical performance. When someone understands "why" they need to move, the resulting motivation is much stronger and more lasting than simply following instructions

without any foundation in knowledge. This cognitive awareness also enables them to intelligently modify their exercises when faced with physical obstacles or time constraints. They are able to distinguish between normal fatigue from exercise and pain that could lead to a risk of injury that could be life-threatening. This self-analysing ability keeps them on a safe and sustainable fitness path without the constant need for expert guidance. In other words, movement intelligence, rooted in the cognitive realm, is the primary foundation for creating an intellectually fit society.

The affective domain of physical literacy plays an equally crucial role in fostering a sense of joy and enjoyment during physical activity. Individuals with high levels of physical literacy feel confident in their bodies, so each exercise session feels like a celebration of their body's capabilities. This sense of joy arises naturally as they master the basic movement skills needed to participate in various games or sports. The fear of failure or the embarrassment of incompetence is replaced by a sense of enthusiasm to continually explore new physical potential. The intrinsic motivation born of this sense of joy is far more powerful in maintaining exercise habits than extrinsic motivations such as rewards or praise. They find personal meaning in every drop of sweat, both as a means of stress relief and as a form of positive self-actualization. When positive emotions are involved in movement, the body releases endorphins, which psychologically create a healthy addictive effect on physical activity. Therefore, cultivating a love of movement through an effective approach is key to combating the increasingly widespread sedentary lifestyle. The integration of intelligent cognitive domains and happy affective domains creates a psychological phenomenon known as "motor autonomy." Someone who has reached this stage will not feel demotivated even if there are no competitions or competitions they are expected to participate in in the near future. They understand that fitness is a personal investment whose results will be enjoyed by themselves well into old age. Consistency in training arises because they have been able to align personal goals with the physical activities they voluntarily choose. Physical literacy gives them a "voice" and "choice" to determine what type of exercise best suits their personality and environmental conditions. This explains why respondents with high physical literacy scores remain active in exercising even though available facilities may be very limited. They are creative in utilizing space and time, because for them, movement is a basic need on par with the needs of food and rest. The absence of external coercion makes each training session a highly personal and empowering moment for their overall mental development.

However, this study also identified several significant barriers that can hinder the development of physical literacy among the community and educational institutions. One of the most prominent factors is the unsupportive physical environment, such as the lack of green open public spaces and easily accessible sports facilities. In large cities, development pressures often displace children's play areas, which serve as the initial laboratory for the development of physical literacy from an early age. Furthermore, environmental safety and air pollution are psychological factors that discourage people from engaging in outdoor physical activity. Without a conducive environment, even strong-willed individuals will encounter technical difficulties in consistently adopting an active lifestyle. This "obeseogenic" environment, or one that tends to encourage inactivity, poses a significant challenge to efforts to improve national physical literacy. More pro-sports urban planning policies are needed to ensure that every citizen has equitable access to physical development resources. Physical literacy cannot thrive in an environment that systematically restricts people's daily movement.

Another fundamental barrier is found in the design of physical education curricula, which often remains stuck in a very rigid, traditional approach. Curricula that focus too much on mastering athletic techniques tend to neglect the essence of developing physical literacy, which should be inclusive for all students. Students without natural

athletic talent often feel marginalized and end up hating physical education, believing they can never reach the standards set. An approach that focuses solely on grades on report cards makes the movement learning process mechanistic and loses its element of enjoyment. Curricula should be geared toward building students' self-confidence first, so they feel comfortable with their bodies before moving on to complex techniques. The lack of varied learning activities also leaves students bored and without a broad reference point for what types of physical activity align with their interests. Curriculum reform is needed to prioritize physical literacy, rather than simply mastering a specific sport sporadically. If schools fail to instill the seeds of physical literacy, it is difficult to expect a future generation that is fit and independently active.

In addition to the curriculum, the competency and perspective of educators or physical education teachers are also inhibiting factors that require serious attention in this discussion. Many educators still have a limited understanding of the concept of physical literacy and prefer a one-way, command-based instruction method. This method often stifles students' creativity in exploring movement and makes them feel like robots simply following orders. Teachers who lack positive reinforcement for affective aspects can inadvertently instill psychological trauma in students with low physical abilities. It is crucial for educators to recognize that their role extends beyond physical training to facilitating the development of students' motivation and cognitive skills. Continuous training for sports practitioners in physical literacy methodology is urgently needed to transform their teaching perspectives. A physically literate educator will be able to create an emotionally safe and physically challenging learning environment for all students. Without a shift in mindset among educators, efforts to transform physical education will remain at the document level without impacting real behavioural changes in the field.

Sociocultural factors and technological developments also contribute to the hampered physical literacy process among today's young generation. Instant culture and dependence on devices have created a highly passive comfort zone, where virtual entertainment is more appealing than real-world physical activity. Many parents are more proud of their children's adeptness in operating digital devices than their adeptness in dynamic physical activity. The stereotype that exercise is a secondary activity less important than academic achievement remains deeply embedded in much of Indonesian society. As a result, time allocated for physical activity is often the first thing sacrificed in favour of tutoring goals or other school assignments. This dichotomous view separating intellectual intelligence and physical fitness is a mental barrier that is very difficult to break down without massive public education. Physical literacy must be positioned as a life skill, as important as literacy and arithmetic. This shift in social paradigm requires the active involvement of all parties, from families and schools to the mass media, to create a new culture of movement.

In conclusion, this section of the discussion clearly demonstrates that the relationship between physical literacy and fitness is reciprocal and mutually reinforcing. Individuals who overcome environmental and educational barriers and successfully develop strong physical literacy will enjoy a significantly better quality of life. They are living proof that fitness is not just about strong muscles, but also about a mind that intelligently manages the body and a heart that enjoys movement. While curriculum and environmental barriers remain significant, this research offers hope that physical literacy can be a strategic solution to address national fitness challenges. Future interventions should focus on eliminating coercion in exercise and replacing it with empowering cognitive and affective reinforcement. By understanding that each individual has a unique physical journey, we can create a more humane approach to improving public health. The sustainability of physical fitness will ultimately depend on how deeply we instill the values of physical literacy as a life philosophy in each individual. The journey

to a truly fit society begins with the recognition that physical literacy is a fundamental right for everyone to be able to move confidently and happily throughout their lives.

Conclusion

This study confirms that physical literacy is a fundamental determinant of the sustainability of a person's physical fitness throughout life. Data findings indicate that true fitness cannot be achieved instantly through purely mechanistic exercise but must be rooted in the integration of physical competence, affective motivation, and deep cognitive understanding. Individuals with high physical literacy have been shown to maintain consistent physical activity because they move with awareness and joy, rather than external pressure. Therefore, physical education teachers and sports coaches are advised to immediately reorient their teaching paradigm by shifting the primary focus from merely pursuing rigid "physical exercise" results to developing self-confidence and enjoyment in movement. Curricula and training programs must be designed to be more inclusive so that everyone feels competent according to their abilities, allowing the seeds of intrinsic motivation to flourish. By creating a learning environment that is emotionally safe and physically challenging, educators can help students build a solid and lasting foundation for health. This transformation is crucial to ensuring that physical fitness becomes an integral part of the modern lifestyle. Ultimately, strengthening physical literacy is a strategic investment for a healthier, more active, and more productive nation.

References

Aspelund, K. T., Marsigliante, S., Muscella, A., & Casper, S. J. (2022). Physical literacy and health-related fitness in children and adolescents: A systematic review. Frontiers in Public Health, 10, 891739. https://doi.org/10.3389/fpubh.2022.891739

Barnett, L. M., Dudley, D. A., Telford, R. D., Morgan, P. J., Sahlberg, S. T., Lubans, D. R., ... & Keegan, R. J. (2016). Guidelines for the selection of physical literacy measures in physical education in Australia. Journal of Teaching in Physical Education, 35(2), 119-127. https://doi.org/10.1123/jtpe.2015-0197

Cairney, J., Dudley, D., Kwan, M., Messing, R., & Wrightson, J. G. (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

Carl, J., Barratt, J., Töpfer, C., Cairney, J., & Pfeifer, K. (2022). How is physical literacy defined? A contemporary systematic review of 84 international conceptualizations. Sports Medicine, 52(12), 2969-2995. https://doi.org/10.1007/s40279-022-01738-4

Chen, S., Gu, X., & Zhang, T. (2021). Physical literacy and physical activity: A path analysis of 5th graders' health-related outcomes. Journal of Sport and Health Science, 10(1), 77-83. https://doi.org/10.1016/j.jshs.2019.07.001

Choi, S. M., Sum, R. K. W., Leung, F. L. H., & Ng, R. S. K. (2018). Relationship between physical literacy and physical activity: A systematic review. International Journal of Sports Science & Coaching, 13(3), 443-454. https://doi.org/10.1177/1747954117738894

Dudley, D. A. (2015). A conceptual model of observed physical literacy. The Physical Educator, 72(5), 236-260. https://doi.org/10.18666/TPE-2015-V72-I5-6020

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

Gunnell, K. E., Longmuir, P. E., Barnes, J. D., Belanger, K., & Tremblay, M. S. (2018). Refining the infrastructure for physical literacy: A systematic review of tools to

assess physical literacy. BMC Public Health, 18(2), 1032. https://doi.org/10.1186/s12889-018-5891-2

Hulteen, R. M., Morgan, P. J., Barnett, L. M., Stodden, D. F., & Lubans, D. R. (2018). Development of foundational movement skills: A conceptual model for physical activity across the lifespan. Sports Medicine, 48(7), 1533-1540. https://doi.org/10.1007/s40279-018-0892-6

Hyndman, B., & Pill, S. (2018). What's in a concept? A Leximancer analysis of physical literacy in a physical education context. European Physical Education Review, 24(1), 27-50. https://doi.org/10.1177/1356336X17704983

Kurniawan, R., & Suminar, T. (2021). The importance of physical literacy in Indonesian physical education: A review of current status. Jurnal Pendidikan Jasmani dan Olahraga, 6(1), 45-53. https://doi.org/10.17509/jpjo.v6i1.31422

Longmuir, P. E., Boyer, C., Lloyd, M., Yang, Y., Boiarskaia, E., Zhu, W., & Tremblay, M. S. (2015). The Canadian Assessment of Physical Literacy: Methods for children's physical literacy. BMC Public Health, 15(1), 767. https://doi.org/10.1186/s12889-015-2106-6

Nugroho, W. A., & Roesdiyanto, R. (2023). Korelasi tingkat literasi fisik dengan tingkat aktivitas fisik harian pada mahasiswa. Jurnal SPORTIF: Jurnal Penelitian Pembelajaran, 9(1), 12-25. https://doi.org/10.29407/js_unpgri.v9i1.19451

Roetert, E. P., & Jefferies, S. C. (2014). Embracing physical literacy. Journal of Physical Education, Recreation & Dance, 85(8), 38-40. https://doi.org/10.1080/07303084.2014.948353

Sanubari, T. P. E., & Putranto, D. (2020). Analisis tingkat literasi fisik siswa sekolah menengah pertama. Jurnal Pendidikan Olahraga, 9(2), 145-156. https://doi.org/10.31571/jpo.v9i2.1932

Shearer, C., Goss, H. R., Edwards, L. C., Jago, R., Knowles, Z. R., Boddy, L. M., ... & Stratton, G. (2018). How is physical literacy defined? A systematic review of 40 years of research. Journal of Teaching in Physical Education, 37(3), 237-245. https://doi.org/10.1123/jtpe.2017-0131

Sum, R. K. W., Ha, A. S. C., Cheng, G. W. K., Chung, P. K., Yiu, K. T. C., Kuo, L. H., ... & Wang, F. J. (2016). Construction and validation of a physical literacy self-report questionnaire for Chinese children and adolescents. Journal of Exercise Science & Fitness, 14(1), 1-8. https://doi.org/10.1016/j.jesf.2016.03.001

Tremblay, M. S., & Lloyd, M. (2010). Physical literacy: Measurement issues and challenges. Physical & Health Education Journal, 76(1), 26-30. https://doi.org/10.1123/jp.v76i1.26

Whitehead, M. (Ed.). (2010). Physical literacy: Throughout the lifecourse. Routledge. https://doi.org/10.4324/9780203881323