
Physical Activity Affects Emotional Intelligence: A Systematic Review

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Abstract

Physical education is an important component of the education curriculum in Indonesia. Not only aims to develop physical fitness, physical education also has a significant role in influencing broader aspects of student development, including emotional intelligence. This study aims to systematically analyze and collate existing scientific evidence on the role of physical education in influencing emotional intelligence. The research method involved selecting relevant research sources from those with predetermined inclusion criteria. A thorough literature search was conducted, followed by data extraction focusing on article title, research design and methods, research objectives and research results. The Scopus database was the main source of the literature search. The results of this study explain that physical education and physical activity have a role in improving emotional intelligence for children, adolescents and adults. It is also inseparable from male and female gender. It is expected for physical education teachers to be able to integrate programs that can improve the emotional intelligence of students in order to better form higher children's emotional intelligence which certainly affects the quality of life in the future.

Keywords: Physical Education, Physical Activity. Emotional Intelligence

INTRODUCTION

Physical education is one of the important components of the education curriculum in Indonesia (Mustafa, P. S., & Dwiyoogo, W. D., 2020). Not only does physical education aim to develop physical fitness, physical education also has a significant role in influencing broader aspects of student development, including emotional intelligence. Emotional intelligence refers to a person's ability to recognize, manage, and utilize the emotions they have, both one's own emotions and those of others (Goleman, 1995). Emotional intelligence is considered important because it helps determine a person's success in living life, not only in the academic environment, but also in the social and professional environment.

Several studies have revealed a positive association between active participation in physical education and increased emotional intelligence in students. Involvement in physical activity and sports can help students to develop the ability to recognize emotions, manage emotions, motivate

themselves, empathize, and foster social relationships (Bailey, 2006; Ruiz-Ariza et al., 2017).

Physical education helps a person educate his emotions in several ways, namely:

Improve the ability to recognize one's emotions, Physical activity and exercise in physical education can help students to be more aware of and recognize the emotions they are feeling (Ruiz-Ariza et al., 2017). Through physical exercise, students learn to distinguish between one emotion and another and understand how those emotions affect their thoughts and behavior. Develop the ability to manage emotions, Physical education provides opportunities for students to learn to express emotions appropriately, control negative emotions, and motivate themselves to achieve certain goals (Bailey, 2006). For example, when facing challenges in sports activities, students learn to stay calm, focused, and persistent in the face of difficulties.

Improve empathy skills, Team sports activities in physical education can help students develop the ability to understand and feel the emotions of others (Biddle & Asare, 2011). Through interaction and cooperation with teammates, students learn to consider the perspectives and feelings of others. Helps build social relationships, Activities in physical education that involve interaction and communication between students can facilitate the formation of positive relationships and the ability to cooperate with others (Bailey, 2006). Students learn to build trust, resolve conflicts, and maintain good relationships with their peers.

Lowers stress and anxiety levels, Physical activities performed in physical education can help lower stress and anxiety levels in students (Biddle & Asare, 2011). This is because exercise can increase the production of endorphins that can improve mood and reduce the negative effects of stress. Through various forms of physical activity, students not only learn to control and express emotions appropriately, but also learn to manage stress, hone patience, increase confidence, and develop teamwork skills (Biddle & Asare, 2011). These skills are important components of emotional intelligence that support students' academic, social, and personal success. Therefore, this study aims to provide a synthesis of physical education research, especially regarding the role of physical education in influencing emotional intelligence.

METHODOLOGY

This study uses a *literature review* method using a *comprehensive* strategy: *Preferred Items for Sysrematic Reviews and Meta Analyses: PRISMA* as as *comprehensive strategies* with a focus on searching for articles in *research journal databases*. The database used is *Scopus*. The *inclusion* criteria in this study are international journals published in the last five years, journals that discuss Physical Education, Physical Activity and Emotional Intelligence, students, and sports. The *exclusion* criteria in this study are local journals, and non-reputable journals. The keywords used in the search



were Physical education, pedagogy, emotional intelligence, sports, positive pedagogy and students. There were 85 articles obtained, and 5 selected articles were analyzed through objectives, topic suitability, sample size, research protocol, and the results of each article.

RESULTS

Table 1. Article review results

Article Title and Year of Publication	Research design/methods	Research Objectives	Research Results
The Effects of Physical Education on Preschoolers' Emotional Intelligence: A Systematic Review (2023)	This study was a systematic review following the guidelines of the Optional Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines [T6]. They conducted a systematic search of two databases, the Web of Sciences and PubMed, to identify articles published before October 19, 2022. The search strategy uses a PICO (Patient, Problem, or Population—Intervention or Exposure—Comparison, Control, or Comparator) design to formulate specific research questions.	Overall, the main aim of this systematic review was to provide a comprehensive overview of the relationship between physical education and emotional intelligence in preschoolers, highlighting the potential benefits and implications for improving emotional competence through early childhood physical activity programs	A systematic review of the impact of physical education on the emotional intelligence of preschoolers yielded several key conclusions based on relevant research analysis: 1. Increasing physical activity hours (PA) in early childhood can have a positive influence on children's emotional competence. 2. Dynamic psychomotor methodologies seem to be more effective than normative psychomotor teaching methodologies in improving the emotional intelligence of preschool-age children. 3. Various intervention programs such as teaching the personal and social responsibility model (TPSR), psychomotor education programs, and psychomotor training programs have shown positive effects on emotional education and competence in preschoolers, including children with developmental delays.
Emotional Intelligence: A	Research on Emotional Intelligence in student-	This research aims to provide valuable	Research on Emotional Intelligence in student-



Review of Student-Athletes at Physical Education Program (2023)	athletes of the Physical Education program uses quantitative descriptive research methods. This study involved 109 student-athletes from the physical education study program of the University of Bengkulu. Participants are selected based on criteria such as active enrollment in the program, involvement in sports clubs, participation in championships, and age range of 17-22 years.	insights for coaches, educators, and sports professionals who work with student-athletes. Understanding an athlete's emotional intelligence profile and any variations based on sports participation can be helpful in developing tailored strategies to improve emotional regulation, motivation, empathy, and relationship management skills among student-athletes in physical education programs.	athletes of the Physical Education program at the University of Bengkulu concluded several things as follows: 1. Athletes/students have a High Level of Emotional Intelligence. 2. There is no significant difference based on sport.
Importance of physical activity on emotional intelligence and gender differences (Impact of physical activity on emotional intelligence and sex differences) 2021	This research is a quantitative descriptive research. The sample studied amounted to 281 students between the ages of 10 and 12 in the city of Granada. The instrument used was TMMS-24, based on the Trait Meta-Mood Scale (TMMS) and an ad-hoc questionnaire to collect socio-demographic variables.	This study aims primarily to describe the level of physical activity practice, emotional intelligence and gender differences in elementary school children	The results showed that those who did more physical activity, most of whom were boys, had better control over their emotions.
Physical activity and emotional intelligence among undergraduate students: a correlational study (2019)	This survey was conducted as a relational and cross-sectional study. The sample consisted of 2960 undergraduate students from the Community of Madrid excluding online undergraduate	This study tested the possible relationship between these variables in undergraduate students from Madrid. As a secondary objective, sex	Undergraduate students with higher levels of Long Term Physical Activity show better Emotional Intelligence scores, particularly in emotional attention and emotional improvement.



	<p>students. Disproportionate sampling was used by university type (public or private) and student field of study (social sciences and law, engineering and architecture, arts and humanities, health sciences and sciences). Participation is voluntary and confidential, and consent is obtained from participants before completing the survey.</p>	<p>differences in the PA domain and EI dimensions were examined.</p>	
<p>Emotional Education for the Development of Primary and Secondary School Students Through Physical Education: Literature Review</p>	<p>Literature review In this context, 18 articles were selected from the Web of Science (WoS) based on strong inclusion and exclusion criteria, which were then categorized and analyzed in depth</p>	<p>The main objective of this study is to understand how EE is methodologically related to physical education in the context of current schools.</p>	<p>The results of the study show that physical education creates a favorable scenario for the expression of emotions. However, there is not enough evidence regarding the emotional education methodologies that sports teachers can apply in their classrooms to improve the emotional management of elementary and secondary school students.</p>
<p>Training the Social-Emotional Skills of Youth School Students in Physical Education Classes (2021)</p>	<p>This study used a pretest and posttest two-group study design to investigate the impact of the implementation of the Social-Emotional Skills Training Program in physical education classrooms for adolescent school students. This study involved quantitative data analysis from both the</p>	<p>This study aims to examine the impact of the implementation of the Social-Emotional Skills Training Program in physical education classes for adolescent school students. The program targets skills such as empathy, cooperation,</p>	<p>The conclusion drawn from the summary provided is that the implementation of the Social-Emotional Skills Training Program in physical education classrooms for adolescent school students has shown a significant positive impact on students' social-emotional skills. The program targets skills such as empathy, cooperation,</p>



	experimental (interventional) and control (comparative) groups. The data collection procedure includes pre-assessment, program implementation, and post-test assessment stages in both groups. Ethical permission is obtained, and parental consent is obtained prior to the trial.	assertiveness, self-control, optimism, and emotional understanding. The study aimed to assess the effectiveness of the program in improving students' social-emotional skills and encouraging positive adolescent development through physical activity and social-emotional learning interventions.	assertiveness, self-control, optimism, and emotional understanding. The studies highlighted in the summary show that the program is well received by participants and effectively improves students' range of social-emotional skills.
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DISCUSSION

The main purpose of *this literature review* is to provide a synthesis of sports pedagogical research, especially regarding the role of physical education on individual emotional intelligence. Physical education encourages the perpetrator to do various physical activities that can affect neurology. Physical activity improves blood flow and brain oxygenation, especially in areas related to emotion processing, such as the amygdala, prefrontal cortex, and hippocampus (Erickson et al., 2011). Exercise also increases the production of neurotransmitters and nerve growth factors that support brain plasticity and nerve connectivity (Hillman et al., 2008). These changes can improve the ability to better understand, manage, and respond to emotions (Sánchez-Lastra et al., 2022).

In this literature review, we will summarize the results of several studies that have shown that through physical education and physical activity or different types of sports can be used in improving the emotional intelligence of individuals. In his research (Moreno & Gonzales, 2023) stated that combining physical education and structured physical activity programs in an early childhood setting can play an important role in improving competence and emotional development in young children. By emphasizing the importance of physical activity and specific teaching methodologies, educators and policymakers can improve the emotional well-being and social skills of preschoolers, contributing to their overall growth and development.

Meanwhile, the research conducted (Pujianto et al, 2023) explains that student-athletes in physical education programs show high levels of emotional intelligence in various dimensions such as self-management, motivation, empathy, and relationship management. This high level of emotional intelligence is essential for student-athletes to effectively balance academic and athletic commitments, manage their time, stay focused, and interact socially. There were no significant



differences in the level of emotional intelligence among student-athletes participating in different sports. Athletes from various sports show high levels of emotional intelligence.

Then a study conducted (Lopez et al, 2021) reported that individuals who did more physical activity, most of whom were boys, had better control over their emotions. This is also supported by research conducted (Sanchez et al, 2019) which states that individuals who do more physical activity have better emotional intelligence scores. In this study, it was said that men were more involved in physical activity for longer than women and had higher emotional clarity and improvement in emotions than women. In three dimensions, it highlights the capacity for improvement, which also presents the highest value along with emotional clarity, where girls have lower grades.

(Pedro et al, 2020) revealed in their literature article that physical education is able to be a good channel for the expression of emotions in both elementary and secondary school children. However, how the mechanism of physical education taught by Guu in managing children's emotional intelligence needs to be further researched. However, in research conducted by (Romualdas and Vilija, 2021), it is clearly shown that in physical education, a form of training can be programmed that can increase emotional intelligence. The results emphasize the importance of integrating social-emotional skills training into physical education classrooms to improve students' social-emotional skills and the overall positive development of adolescents.

An interesting thing that can be observed from the various articles above is how physical education and physical activity can help individuals become more aware of their emotional and physical state (Garner & Wimshurst, 2016). Then these skills can be transferred to everyday life situations, thereby improving general regulation of emotions (Sánchez-Lastra et al., 2022). Keep in mind that it is good that learning carried out in physical education and physical activities can be designed well and integrate programs in increasing emotional intelligence so that the results obtained will be much more optimal.

CONCLUSION

The advantages of physical education and unconscious physical activity can increase emotional intelligence for the perpetrators, both children, adolescents and adults. It is also inseparable from the gender of men and women. It is hoped that physical education teachers will be able to integrate programs that can increase students' emotional intelligence so that they can form higher children's emotional intelligence which of course affects the quality of life in the future.



REFERENCE

- Bailey, R. (2006). Physical Education and Sport in Schools: A Review of Benefits and Outcomes. *Journal of School Health*, 76(8), 397-401.
- Biddle, S. J., & Asare, M. (2011). Physical Activity and Mental Health in Children and Adolescents: A Review of Reviews. *British Journal of Sports Medicine*, 45(11), 886-895.
- Erickson, K. I., Voss, M. W., Prakash, R. S., Basak, C., Szabo, A., Chaddock, L., ... & Kramer, A. F. (2011). Exercise training increases size of hippocampus and improves memory. *Proceedings of the National Academy of Sciences*, 108(7), 3017-3022.
- Garner, P. W., & Wimshurst, Z. L. (2016). Emotion regulation in the context of an educational program to facilitate social and emotional learning. *Emotional and Behavioural Difficulties*, 21(1), 7-23.
- Goleman, D. (1995). *Emotional Intelligence*. Bantam Books.
- Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: exercise effects on brain and cognition. *Nature reviews neuroscience*, 9(1), 58-65.
- Lopez, S.G., Ortega, F.Z., Jimenez, J.L.U., & Valero, G.G. (2021). Importance of physical activity on emotional intelligence and gender differences (Impact of physical activity on emotional intelligence and sex differences). *Artículos de carácter científico: trabajos de investigaciones básicas y/o aplicadas Journal* vol 42
- Moral, P. V., Lazo, S.E., Huete, R.R., Lazo, P.E., & Valenzuela, C.F. (2020). Emotional Education for the Development of Primary and Secondary School Students Through Physical Education: Literature Review. *Journals Education Sciences* Volume 10 Issue 8
- Moreno, J.G., & Gonzales, M.R. (2023). The Effects of Physical Education on Preschoolers' Emotional Intelligence: A Systematic Review. *MDPI Journal Sustainability* vol 15 Issue 13.
- Pujianto, Dian., Nopiyo, Y.E., Insanistyo, Bayu., Yarmani., Syafrial., Sugihartono, T., & Ibrahim. (2023). Emotional Intelligence: A Review of Student-Athletes at Physical Education Program. *International Journal of Human Movement and Sports Sciences* 11(3): 540-547
- Romualdas, M., & Vilija, M. (2021). Training the Social-Emotional Skills of Youth School Students in Physical Education Classes. *Frontier sin Psychology*, 12: 741195.
- Ruiz-Ariza, A., Grao-Cruces, A., de Loureiro, N. E. M., & Martínez-López, E. J. (2017). Influence of Physical Fitness on Cognitive and Academic Performance in Adolescents: A Systematic Review from 2005–2015. *International Review of Sport and Exercise Psychology*, 10(1)
- Sánchez-Lastra, M. A., Martínez-Lemos, I., & Ayán, C. (2022). The impact of physical activity on emotional intelligence: A systematic review. *Frontiers in Psychology*, 12, 715898.
- Sanchez, J. A., Vega, I.D., Gonzalo, S.E., & Romo, G.R. (2019). Physical activity and emotional intelligence among undergraduate students: a correlational study. *BMC Public Health* journal 19:1241

