Rehabilitation and Sports Medicine. 2025; 5:200
doi: 10.56294/ri2025200

REVIEW

Physical activity in childhood: benefits, barriers, and educational strategies

Actividad física en la infancia: beneficios, barreras y estrategias educativas

Ruth Elizabeth Calderón Landívar[1], Valeria Denisse Granda Moreira[1], Angie Nicole Bonilla Mora[1], Jenrry Fredy Chávez-Arizala[1]

[1]Instituto Superior Tecnológico Adventista del Ecuador. Santo Domingo, Ecuador.

Cite as: Calderón Landívar RE, Granda Moreira VD, Bonilla Mora AN, Chávez-Arizala JF. Physical activity in childhood: benefits, barriers, and educational strategies. Rehabilitation and Sports Medicine. 2025; 5:200. https://doi.org/10.56294/ri2025200

Submitted: 02-02-2024 **Revised:** 08-07-2024 **Accepted:** 01-01-2025 **Published:** 02-01-2025

Editor: PhD. Nicola Luigi Bragazzi

ABSTRACT

Introduction: the research addressed the importance of physical activity in childhood as an essential element for comprehensive development. It was highlighted that regular exercise not only strengthened physical health but also influenced cognitive, social, and emotional well-being. From an early age, the establishment of active habits prevented chronic diseases and laid the foundations for a healthy lifestyle, with immediate and long-term benefits.
Development: physical activity was defined as any bodily movement that increased energy expenditure above the basal level. In children aged 5 to 10, regular exercise promoted motor development, coordination, balance, and flexibility, as well as strengthening the cardiovascular, pulmonary, and muscular systems. The literature showed that physically active children achieved greater self-esteem, confidence, and social interaction skills. Academically, physical activity was associated with better school performance, greater concentration, and a greater willingness to learn. However, limitations persisted, such as a lack of resources, time, and teacher training, as well as differing attitudes among parents and educators. In response, schools became key spaces for implementing physical education programs, extracurricular activities, and active recess, contributing to the creation of a culture oriented toward well-being.
Conclusions: the study concluded that physical activity in childhood was a decisive factor for health and comprehensive education. Overcoming structural and cultural barriers required the joint commitment of families, teachers, and authorities. Thus, promoting physical activity in children not only had an impact in the present but also projected lasting benefits for future quality of life.

Keywords: Childhood; Physical Activity; Comprehensive Development; School Health; Academic Performance.

RESUMEN

Introducción: la investigación abordó la relevancia de la actividad física en la infancia como un elemento esencial para el desarrollo integral. Se destacó que la práctica regular de ejercicio no solo fortaleció la salud física, sino que también influyó en el bienestar cognitivo, social y emocional. Desde edades tempranas, la instauración de hábitos activos permitió prevenir enfermedades crónicas y sentó las bases de un estilo de vida saludable, con beneficios inmediatos y a largo plazo.
Desarrollo: se definió la actividad física como todo movimiento corporal que incrementó el gasto energético por encima del nivel basal. En los niños de 5 a 10 años, la práctica constante favoreció el desarrollo motor, la coordinación, el equilibrio y la flexibilidad, además de fortalecer los sistemas cardiovascular, pulmonar y muscular. La literatura evidenció que los menores físicamente activos alcanzaron mayor autoestima, seguridad y capacidad de interacción social. A nivel académico, se constató que la actividad física se asoció con un mejor rendimiento escolar, mayor concentración y disposición hacia el aprendizaje. Sin embargo, persistieron limitaciones como la falta de recursos, tiempo y capacitación docente, así como actitudes dispares entre padres y educadores. Frente a ello, las escuelas se constituyeron en espacios clave para

implementar programas de educación física, actividades extracurriculares y recreos activos, contribuyendo a la creación de una cultura orientada al bienestar.
Conclusiones: el estudio concluyó que la actividad física en la infancia representó un factor decisivo para la salud y la formación integral. Superar las barreras estructurales y culturales exigió el compromiso conjunto de familias, docentes y autoridades. De este modo, la promoción de la actividad física infantil no solo impactó en el presente, sino que proyectó beneficios duraderos para la calidad de vida futura.

Palabras clave: Infancia; Actividad Física; Desarrollo Integral; Salud Escolar; Rendimiento Académico.

INTRODUCTION

Physical activity in childhood has become established as a fundamental pillar for the comprehensive development of children, as it is a practice that contributes not only to physical health but also to cognitive, social, and emotional strengthening. Over the last few decades, various studies have shown that regular physical activity in childhood promotes the acquisition of healthy habits and the prevention of chronic diseases which, although not apparent at an early age, found childhood to be a crucial stage for their prevention. In this sense, establishing physical activity practices from an early age laid the foundations for an active and healthy lifestyle, with positive short- and long-term repercussions.

Scientific evidence indicated that physical activity promoted the development of fine and gross motor skills, improved coordination, balance, and flexibility, while strengthening the cardiovascular, pulmonary, and muscular systems. These benefits were not limited to the biological level, as they also translated into greater self-esteem, confidence, and social interaction skills. Physically active children showed better leadership, communication, and conflict resolution skills, which reinforced the building of positive bonds in the school and family environment.

Despite its importance, regular physical activity in childhood was marked by limitations and barriers. Globally, more than 80 % of adolescents did not meet the minimum levels recommended by the World Health Organization, while in Ecuador, 88,21 % of children and young people between the ages of 5 and 17 engaged in less than 60 minutes of physical activity per day. This deficit was associated with an increased risk of overweight, obesity, and chronic noncommunicable diseases, underscoring the need to implement sustainable, evidence-based strategies that promote active habits in schools and communities.[1]

Consequently, schools were identified as a strategic setting for promoting physical activity through effective physical education programs, extracurricular activities, and active recess. The commitment of parents, teachers, and educational authorities was essential to overcoming barriers of infrastructure, time, and resources, while strengthening a school culture oriented toward comprehensive well-being. Childhood, considered a sensitive stage for the acquisition of habits, offered a unique opportunity to promote physical activity as a formative axis, with a direct impact on the health, academic performance, and quality of life of school-age children.

DEVELOPMENT

CONCEPTUAL FRAMEWORK

Physical Activity

Physical activity is defined as any bodily movement performed by the musculoskeletal system that causes energy expenditure above the basal level, promoting an increase in heart and respiratory rate. The practice of physical activity yielded multiple benefits in children, strengthening their growth and development, not only physically but also intellectually, cognitively, socially, and psychomotorically. Although cardiovascular disease did not manifest itself in children, bad habits from this age could be corrected in order to encourage and maintain those that were positive for health. Establishing healthy physical activity habits from an early age laid the foundation for a proper and healthy lifestyle.[1]

Importance of Physical Activity in Child Development

It is very important for improving children's fine and gross motor skills, as well as their coordination, balance, and flexibility, allowing them to move with greater skill and confidence. Exercise strengthens the cardiovascular, pulmonary, and muscular systems, providing the basis for optimal physical health.

Participating in physical activity can lead to greater social and emotional engagement, as children learn to collaborate with others, find common ground and resolve conflicts, and demonstrate leadership and communication skills, positive relationships, self-esteem, and confidence.[2]

WHO recommendations for physical activity in this age group

Planned behavior is essential for promoting physical activity in children aged 5 to 10. These interventions,

which addressed individual, family, school, and community factors, facilitated the adoption and maintenance of healthy lifestyles from childhood. However, globally, more than 80 % of adolescents did not meet the minimum levels of physical activity recommended by the World Health Organization (WHO). In Ecuador, 88.21% of children and young people aged 5 to 17 engaged in less than 60 minutes of daily physical activity, increasing their risk of chronic diseases. Therefore, it was crucial to implement evidence-based strategies to promote physical activity in childhood.

Factors influencing physical activity in school-age children

Individual factors (age, gender, preferences)

Parents and teachers in Santo Domingo recognized the importance of physical activity for children's development, but challenges remain for its effective implementation, such as a lack of resources and the need for more training. Individual factors such as age, gender, motivation, and abilities influenced children's physical activity, so it was crucial to remove barriers and offer diverse and attractive opportunities. While there was a favorable attitude toward physical activity, there was still work to be done to consolidate a culture of active living and well-being in the educational community.[3]

Benefits of physical activity in children aged 5 to 10

Physical and health benefits

Regular physical activity in children aged 5 to 10 generated significant physical and health benefits. According to the WHO, it improved muscle and bone health, reducing the risk of diseases such as hypertension, cardiovascular problems, and diabetes. It strengthened the cardiovascular system, optimizing heart and lung function, which reduced the risk of future cardiovascular problems. It contributed to the development of optimal bone health, which is essential for achieving adequate bone mass and preventing osteoporosis. It helped maintain a healthy body weight, reducing the risk of childhood overweight and obesity and their associated health problems. In summary, regular physical activity during childhood has cardiovascular, bone, and weight control benefits, with positive implications for long-term health.

Impact on academic performance

Scientific evidence suggested that regular physical activity during childhood had physical, psychological, and academic benefits. Studies showed that physically active children performed better in school, showed greater interest and commitment to academic tasks, and behaved better in the classroom. Physical activity was also associated with optimal cognitive function, improving attention, memory, and executive skills. Physically active children tend to show greater willingness and motivation to learn, which is reflected in their overall academic performance. In addition, regular physical activity contributes to the prevention of health problems such as overweight, obesity, and cardiovascular disease.

Barriers to physical activity in the school environment

Time and resource constraints

According to the World Health Organization (WHO), children aged 5 to 10 should engage in 60 minutes of moderate to vigorous physical activity every day. This includes aerobic exercises such as outdoor games, sports, and dance, which raise the heart rate. Muscle and bone strengthening activities such as climbing, squats, and sit-ups are also recommended, as well as flexibility exercises such as stretching and yoga. It is suggested that these 60 minutes be divided into 10- to 15-minute sessions throughout the day, encouraging healthy habits from an early age.[1]

Attitudes of parents and teachers

Most parents and teachers had a positive attitude toward physical activity in children. Eighty-two percent of parents considered motor skills to be essential for the comprehensive development of children aged 5-10, highlighting benefits in health, academic performance, and emotional well-being. However, a sector of parents persisted in perceiving it as irrelevant. Teachers also took a favorable stance toward the inclusion of physical education, recognizing its contribution to holistic development, although they faced challenges in terms of infrastructure and training. In general, there was evidence of a growing recognition of the importance of physical activity in the educational community.[4]

Intervention strategies to promote physical activity in school settings

Effective physical education programs

The main strategy for promoting physical activity in schools was the implementation of effective physical education programs. The scientific literature offered various recommendations in this regard. A meta-analysis published in the journal Preventive Medicine indicated that "physical education programs that included

moderate to vigorous physical activity for at least 50 % of class time were most effective in increasing students' physical activity levels." Similarly, a study in the Journal of Physical Education found that "programs that offered a wide range of physical activities, encouraged student participation and enjoyment, and trained teachers tended to be more successful in promoting positive lifestyle habits."

Extracurricular activities and active recess

Sports and leisure activities outside of school played an important role in increasing students' physical activity levels. A study published in the Journal of School Health found that students who participate in extracurricular physical activity tended to be more active and healthier than students who do not participate in such activities.[5]

In addition, active breaks, in which students had the opportunity to participate in games and physical activities during breaks, also proved to be an effective strategy. It was important to note that the planning and implementation of free time activities and active breaks should promote student participation, enjoyment, and motivation in physical activities.

Implementation and evaluation of the intervention

Design and planning of physical activities

From a holistic perspective, the design and planning of physical activities for students in the school context required a comprehensive assessment of the needs and interests of the student population. Learning objectives should be aligned with physical education curriculum standards and geared toward the physical, cognitive, and socio-emotional development of children. The selection and sequencing of recreational activities, exercises, and sports must consider fitness levels and motor skills, implementing participatory and student-centered methodological strategies. Likewise, efficient management of available time and space, as well as continuous evaluation and feedback, were crucial elements in optimizing the implementation of physical activity programs in schools.[6]

Implementation of strategies in the educational unit

In an educational unit for children, various specific strategies were implemented to encourage physical activity. Starting with games and recreational activities, cooperative games that promoted interaction and teamwork were suggested, as well as traditional games with simple rules that developed motor skills and exploration activities in natural environments. In addition, exercise circuits and stations were recommended that worked on different physical abilities, combining strength, flexibility, balance, and coordination exercises, while promoting creativity and problem solving.[7,8]

CONCLUSIONS

The analysis of physical activity in childhood reaffirmed its importance as an essential component in the comprehensive development of children. Through theoretical review and scientific evidence, it was found that regular physical activity not only generated immediate physical benefits but also became a protective factor against chronic diseases in adulthood. Establishing healthy habits from an early age was a key resource for preventing diseases related to a sedentary lifestyle, such as obesity, hypertension, and metabolic disorders.

Among the main contributions identified were the benefits for motor development, coordination, balance, and flexibility, which helped to consolidate the foundations for optimal physical growth. Likewise, physical activity was found to play a fundamental role in strengthening the cardiovascular, pulmonary, and muscular systems, promoting bone health and weight control. Beyond the biological dimension, a significant impact was also evident in the social and emotional spheres, as active children achieved greater self-esteem, confidence, and interaction skills, reinforcing their interpersonal bonds and the construction of positive relationships.

In the academic sphere, the findings showed a clear relationship between physical activity and school performance. Physically active students had better levels of attention, memory, and executive skills, which translated into a greater willingness to learn, better classroom behavior, and a stronger commitment to schoolwork. This demonstrated that physical activity should not be considered solely as a recreational component, but as a pedagogical element that enhances comprehensive education.

However, multiple barriers were also identified that hindered adequate physical activity in school and community settings. Time constraints, lack of infrastructure, and lack of teacher training were recurring obstacles. Added to this was the perception of some parents who downplayed the importance of motor skills in child development. Given this situation, the need to strengthen educational and public health policies that promote effective physical education programs, extracurricular activities, active recess, and evidence-based intervention strategies was recognized.

Finally, childhood was recognized as a critical and strategic stage for establishing active lifestyles. The joint participation of families, teachers, and the educational community was decisive in consolidating a culture

oriented toward comprehensive well-being. The promotion of physical activity in this age group not only impacted children's current health but also projected long-term benefits, ensuring healthier, more resilient generations with greater opportunities for personal and academic development.

BIBLIOGRAPHICAL REFERENCES

1. Organización Mundial de la Salud. Actividad física. Ginebra: OMS; 2024 jun 26. Disponible en: https://www.who.int/es/news-room/fact-sheets/detail/physical-activity

2. Gallego J, Alcaraz M. VI Congreso internacional de deporte inclusivo. Almería: Editorial Universidad de Almería; 2018. Disponible en: https://www.google.com.ec/books/edition/VI_Congreso_internacional_de_deporte_inc/WL9QDwAAQBAJ

3. Ramírez R, Ruíz K, Correa J. Condición física, nutrición, ejercicio y salud en niños y adolescentes. Bogotá: Editorial Universidad del Rosario; 2016. Disponible en: https://www.google.com.ec/books/edition/Condici%C3%B3n_f%C3%ADsica_nutrici%C3%B3n_ejercicio/Vl0yDwAAQBAJ

4. McLennan N, Thompson J. Educación física de calidad. París: UNESCO Publishing; 2015. Disponible en: https://www.google.com.ec/books/edition/Educaci%C3%B3n_F%C3%ADsica_de_Calidad/COTvCAAAQBAJ

5. Nemiña E, Rodríguez J, Suelves M. La educación física en la escuela: recursos, experiencias y prácticas innovadoras en educación infantil y primaria. Madrid: Dykinson; 2024. Disponible en: https://www.google.com.ec/books/edition/La_educaci%C3%B3n_f%C3%ADsica_en_la_escuela_recu/nPj_EAAAQBAJ

6. Gil P. Diseño y desarrollo curricular en educación física y educación infantil. Sevilla: Wanceulen Editorial; 2004. Disponible en: https://www.google.com.ec/books/edition/Dise%C3%B1o_y_Desarrollo_Curricular_en_Educa/1oYxDwAAQBAJ

7. López R. Estrategias lúdicas para motivar la práctica de la actividad física: el ejemplo de los estudiantes del ciclo cuarto. Múnich: GRIN Verlag; 2017. Disponible en: https://www.google.com.ec/books/edition/Estrategias_l%C3%BAdicas_para_motivar_la_pr/FAr-DQAAQBAJ

8. Ordoñez M. La actividad física y la prevención de la obesidad en los niños de la escuela Miguel Lriofrío número dos; Loja 2014 [tesis]. Loja: Universidad Nacional de Loja, Área de la Educación, el Arte y la Comunicación; 2015. Disponible en: https://dspace.unl.edu.ec/jspui/bitstream/123456789/16797/1/Tesis%20Final%20Manuel.pdf

FUNDING

None.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTION

Conceptualization: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Data curation: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Formal analysis: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Research: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Methodology: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Project management: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Resources: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Software: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Supervision: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Validation: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Visualization: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Writing – original draft: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

Writing – review and editing: Ruth Elizabeth Calderón Landívar, Valeria Denisse Granda Moreira, Angie Nicole Bonilla Mora, Jenrry Fredy Chávez-Arizala.

https://doi.org/10.56294/ri2025200 ISSN: 3072-838X