



## REVIEW ARTICLE

Impact of physical activity on overall health: Physical, mental, and social benefits

Rolando Manuel Benites <sup>1</sup>, Grimaneza Miguelina Fonseca-Díaz <sup>1</sup>, Diana Gissela Benites-Fonseca <sup>1</sup>, David André Benites-Fonseca <sup>1</sup>

<sup>1</sup>Autonomous Regional University of the Andes, Ambato, Ecuador.

**Received:** September 24, 2025

**Accepted:** October 12, 2025

**Published:** October 15, 2025

**Citar como:** Benites RM, Fonseca-Díaz GM, Benites-Fonseca DG, Benites-Fonseca DA. Impacto de la actividad física en la salud integral: Beneficios físicos, mentales y sociales. Rev Ciencias Médicas [Internet]. 2025 [citado: fecha de acceso]; 29(S1): e6900. Disponible en: <http://revcmpinar.sld.cu/index.php/publicaciones/article/view/6900>

### ABSTRACT

**Introduction:** physical exercise is an essential element for promoting overall health, as it helps prevent chronic diseases and improves physical, mental, and social well-being.

**Objective:** to assess the development of planned and structured physical exercise (PE) activities as protectors of physical and mental overall health and the perception an individual has of their position in life.

**Methodology:** a literature review was conducted on current research regarding the impacts of physical exercise on health, considering elements such as the impact of social, cultural, and gender contexts on motivation to engage in sports.

**Development:** findings show that organized and planned physical activity not only enhances physical and metabolic health but also positively influences mental health by reducing stress, anxiety, and depression. Additionally, a sedentary lifestyle driven by excessive screen time and lack of healthy habits was found to contribute to an increase in chronic diseases among children and adults.

**Conclusion:** it is inferred that promoting physical activity from a multidimensional perspective is crucial for implementing effective public health policies. The introduction of educational strategies and population intervention programs can encourage active lifestyles, thereby increasing quality of life and decreasing the burden of preventable diseases in society.

**Keywords:** Exercise; Integral Healthcare; Disease Prevention; Sedentary.

## INTRODUCTION

Physical inactivity among adults and adolescents aims for a relative reduction of 10 % by 2025 and 15 % by 2030 compared to 2010 figures. Estimates suggest that without increased physical activity, public health systems will bear a cost of approximately USD 300 billion between 2020 and 2030. Promoting education and healthy environments and developing life skills where adopting or strengthening healthy lifestyles is taught. Critical and creative thinking, effective communication, building healthy relationships, empathizing with others, and managing one's life in a healthy and productive way are emphasized.<sup>(1)</sup>

Globally, obesity has nearly doubled since 1980. In 2014, 10 % of men and 14 % of women aged 18 or older were obese. Physical exercise (PE) is a planned and structured physical activity aimed at a final objective, serving as a preventive tool against systemic diseases and a protective factor for physical and mental health. Furthermore, motivations for engaging in exercise are fundamental and can be influenced by gender. Different motivations for exercising based on gender, the relationship between performing physical exercise and the perception of physical and mental health.<sup>(2)</sup>

It is easy to understand the importance of physical exercise as a therapeutic tool for people with Type 2 Diabetes Mellitus (DM 2), who often present both DM 2 and obesity, and frequently have clinical alterations related to sedentary behavior. Sedentary individuals typically show a high body mass index (BMI).<sup>(3)</sup>

Obesity increases the likelihood of diabetes, hypertension, coronary heart disease, stroke, ischemic heart disease, some types of cancer, osteoarthritis, osteoporosis, respiratory issues, locomotor problems, or psychological problems, among other pathologies. In contrast, regular physical activity helps maintain a healthy body.<sup>(1)</sup> Emphasizing the distinction between "exercise" and "physical activity," where "physical activity" is defined as any activity that involves energy expenditure through bodily movements generated by muscles. While "exercise" is understood as an activity to maintain or improve physical condition.

Continuing to find that the ongoing practice of physical activity provides hundreds of benefits in the physical, social, and emotional aspects of older adults.<sup>(4)</sup> Over time, there arises a need for a tool to provide reliable approaches to physical activity in light of the growing prevalence of diseases stemming from physical inactivity, particularly in developing countries where energy expenditure levels differ compared to developed nations. The World Health Organization (WHO) developed the Global Physical Activity Questionnaire, known as GPAQ, as an active surveillance tool in developing countries, and several versions have been produced since its initial draft approval.<sup>(5)</sup>

All of the above leads the authors to develop this literature review, aiming to assess the development of planned and structured physical exercise activities as protectors of overall physical and mental health, and the perception an individual has of their life position.

## METHODS

A bibliographic review was conducted, including articles with full texts available from the last five years in English and Spanish. To obtain the information, databases such as MEDLINE, Scielo, Elsevier, Springer, and PubMed were consulted using descriptors like: Physical activity, Comprehensive health, Disease prevention, Sedentarism, Mental and social well-being. A total of 48 articles that referred to the work's objective were consulted, and 22 references were selected through a roundtable discussion among all authors.

## DEVELOPMENT

Author Benites Rolando (2024) defines that 41 % of respondents in his research engaged in vigorous physical activities, while 59 % are unsure of their activity level. Regarding moderate activity, 50 % participated, and 83 % walked for at least 10 minutes continuously. Concerning the time dedicated to these activities, 24 % spent one to three hours on intense activity, while 41 % did so walking. However, 63 % of individuals reported spending a lot of time sitting during a workday, indicating an imbalance between physical activity and sedentarism.

This research has shown that physical exercise is a positive predictor of quality of life (QoL) in the general population concerning negative symptoms such as depression, anxiety, sleep dysfunction, and perceived stress.<sup>(2)</sup> The practice of physical activity constitutes an essential means of improving physical and mental health. Its influence on attention, memory, or concentration helps improve academic performance at various educational levels.<sup>(6)</sup> Epidemiological data on global obesity show an accelerated growth trend, especially in younger populations, making obesity among school-aged children a public health issue.<sup>(7)</sup>

In the United States, a report on the prevalence of physical activity (PA) for adults has recommended the implementation of two movement models for healthy adult Americans. The first is to perform 30 minutes of moderate PA five days a week, and the second is to engage in 20 minutes of vigorous-intensity PA three days a week, or a combination of moderate and vigorous activity.<sup>(8)</sup>

Among Ecuadorian adolescents aged 10 to under 18 years, more than one-third (34 %) are inactive, 38,1 % are irregularly active, and fewer than three out of ten are active. Female adolescents are inactive in greater proportion than males. These data are concerning as they reveal a high level of inactivity and sedentarism among Ecuadorian adolescents,<sup>(1)</sup> a situation that increases with age. As one ages, the body undergoes multiple changes and loses physical, psychological, and even social capabilities, along with chronic diseases leading to multimorbidity, reducing their Quality of Life (QoL) and increasing costs related to social-healthcare.<sup>(2)</sup>

Globally, notable differences in physical inactivity levels are observed based on age and sex. Women are, on average, five percentage points less active than men, a statistic that has remained since 2000. After age 60, activity decreases for both men and women. 81 % of adolescents (aged 11 to 17 years) do not engage in physical activity. Female adolescents are less active than males: 85 % do not meet WHO recommendations compared to 78 % for males.<sup>(9)</sup> A high percentage of overweight children (40,6 % of children aged six to nine in 2019) was noted. In a study in Mexico, 59,4 % of obese children had three to four televisions in their homes.<sup>(10)</sup>

The contribution of physical exercise to reducing anxiety and depression, along with a subsequent increase in quality of life, analyzes different motivations for exercising based on gender and their perception of physical and mental health.<sup>(11)</sup> In this context, an important indicator for determining an individual's health status, especially during the aging process, is quality of life (QoL).

According to the World Health Organization (WHO), quality of life can be defined as the perception an individual has of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns,<sup>(1)</sup> which varies from person to person, from group to group, and from place to place.<sup>(2)</sup> 31 % of adults and 80 % of adolescents do not meet the recommended levels of physical activity. The global goal is to reduce physical inactivity among adults and adolescents.<sup>(9)</sup>

The concept of quality of life comprises six dimensions, namely: physical health, psychological state, level of independence, social relationships, personal beliefs, and environment. To be evaluated, it must be recognized in its multidimensional concept,<sup>(2)</sup> the beneficial impact of physical exercise on health and the subjective perception of it, both in young populations and in older individuals, as well as the contribution of physical exercise to reducing anxiety and depression, with a consequent increase in quality of life.<sup>(4)</sup>

The WHO has recommended increasing physical activity as a health element, that is, performing moderate-intensity aerobic physical activity for at least 150 minutes per week, or 75 minutes of vigorous-intensity activity per week, or an equivalent combination of moderate and vigorous activity with an intensity that provides substantial health benefits.<sup>(12)</sup> It has been identified that the time required to engage in physical activity in adults is a barrier to regular exercise; perhaps a possibility to reduce time while achieving the same results is through the application of interval training, as it has been proven to be a powerful stimulus for adaptations and requires less time than continuous exercise.<sup>(13)</sup>

Physical activity and exercise are used interchangeably, but they are not equivalent, as physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure, whereas exercise is a variety of physical activity that is planned, structured, repetitive, and performed with the goal of improving or maintaining one or more components of functional fitness.<sup>(2)</sup> Anaerobic exercise (weightlifting), like aerobic exercise (running), improves mood. After exercising, one may experience a feeling of revitalization, euphoria, and achievement.

Endurance races stimulate the release of happiness hormones (endorphins) and brain-derived neurotrophic factors (BDNF). Specific BDNF, derived from the brain, produce significant effects on various aspects of physical health and cardiovascular health in women, such as heart rate, cholesterol, muscle strength, general health, walking speed, mental health, pain/discomfort, anxiety/depression, executive functioning, emotional well-being, sleep quality, and sense of coherence. There are even effects on psychological well-being prescribed with moderate to intense strength exercise and moderate-intensity aerobic exercise. The exercise is conducted in 60-minute sessions, three times a week, with a minimum intervention time of three months for health in adults.<sup>(14)</sup>

This combination of physical activity done during the week is based on intensity, duration, and frequency and can utilize the concept of METs (metabolic equivalents), which assign a specific intensity value to each activity; thus, the amount, intensity, and volume of physical activity can be determined with the perspective of maintaining or improving quality and life expectancy, as well as increasing muscular and cardiorespiratory fitness, functional health, and improving cognitive functions, aerobic fitness, strength, and flexibility. It suggests improvements in physical capabilities such as strength, balance, and stability, but it also shows some promise in reversing functional and cognitive decline.<sup>(2)</sup>

Studies describing physical activity include the Baecke questionnaire, a tool that records physical activity over the past 12 months, which is easy to understand and apply, as well as for evaluating the level of physical activity in sedentary subjects using continuous training and interval training.<sup>(15)</sup> Strength training focused on coordination and aerobic capacity allows for improvements in attention and planning, which can be explained by better irrigation in the anterior cerebral cortex that enables higher mental activation.<sup>(16)</sup>

Promoting healthy habits within the culture of movement is necessary for improving health.<sup>(12)</sup> This process even occurs during prolonged and sustained endurance physical activity. In other words, intense feelings of happiness, satisfaction, or euphoria stimulate dopamine synthesis.<sup>(7)</sup>

According to the WHO, strength exercise is considered a complementary training to achieve additional results alongside base training, which would be aerobic exercise; this does not fully align with the results obtained in this review, as previous studies indicate that strength exercise can even be used as the sole training to achieve satisfactory results, with the WHO recommending it as a preventive measure against risk factors to avoid the development of cardiovascular diseases, which represent the leading cause of death worldwide.<sup>(16)</sup>

Physical activity, whether moderate or intense, improves health. The most common forms include walking, cycling, playing sports, and participating in recreational games and activities. Physical exercise is important and vital for human survival, offering benefits without the significant energy expenditure that sports typically require, nor demanding psychophysical training.<sup>(3)</sup> Individuals reporting a moderate level of physical activity showed significantly better vitality, mental health, and overall health, while those with vigorous activity levels averaged higher in overall health compared to those with light activity levels.<sup>(16)</sup>

These are the benefits of physical activity for adults and the elderly: it reduces the risk of mortality from all causes and cardiovascular diseases, the onset of hypertension, specific cancers, type 2 diabetes, falls, and improves mental health, cognitive health, sleep, and measures of body fat.<sup>(17)</sup>

Intensive training is identified by high intensity above the aerobic threshold; its purpose is to repeatedly stress the physiological system, which could be utilized during a specific type of interval training defined as short bursts of high intensity separated by short periods of low-intensity rest. The effects of intensive training in untrained subjects after just a few hours and two days later showed adaptation at the muscular level.<sup>(15)</sup>

The pattern of physical activity in children is characterized by sedentary activities such as watching television or playing video games. 67,8 % of students spend one to four hours daily watching television, movies, or listening to music during the week, with the percentage of students increasing to 75,9 % on weekends who dedicate the same amount of time to these activities.<sup>(18)</sup>

Physical exercise enhances health as one of the six pillars of lifestyle that provides the greatest health benefits. In this context, young and adolescent populations seem to present a risk profile. In fact, some studies indicate that between 60 % and 80 % of adolescents and young people acknowledge being sedentary, and the motivations for engaging in physical activity bear great relevance.<sup>(4)</sup> This study provided evidence supporting the hypothesis linking physical activity and Health-Related Quality of Life (HRQoL), revealing that those with moderate and vigorous levels of physical activity exhibit better HRQoL in dimensions of social functioning, vitality, and overall and mental health. Future studies should focus on differentiating the levels of physical activity that best promote HRQoL, particularly in school populations.<sup>(15)</sup>

The WHO defines physical activity as all bodily movement produced by skeletal muscles that require energy expenditure. Regarding gender differences, it is noted that women engage in physical exercise less frequently compared to men, a fact that, according to some studies, suggests the existence of stereotypes and gender roles affecting exercise participation.<sup>(19)</sup> The benefits of physical activity and the risks of sedentarism and physical inactivity are significant risk factors for mortality, 20 % to 30 % higher than those who are sufficiently active.<sup>(20)</sup>

The American College of Sports Medicine (ACSM) also provides recommendations for prescribing exercise for women, suggesting moderate-intensity aerobic exercise five times a week for 30-60 minutes per session, with progression based on tolerance until reaching at least 150 minutes per week.<sup>(21)</sup> For intense aerobic exercise, they recommend doing it three times a week for 20-30 minutes per session, with progression to tolerance until reaching at least 75 minutes per week.

Concerning strength training, they recommend performing it two or more times a week, with a volume of eight to ten exercises per session targeting major muscle groups. They also recommend flexibility and balance exercises two to three times a week.<sup>(2)</sup> Physical exercise serves as a protective factor for physical and mental health. Additionally, motivations to engage in physical activity are crucial and may be influenced by gender. The effect of physical activity improves academic and cognitive performance, fitness levels, particularly through changes in body composition and cardiorespiratory fitness.<sup>(6)</sup>

Another effect induced by intensive training in sedentary individuals after two weeks was an increase in maximum oxygen volume (VO2 max); other results of intensive training studied in the medium term (at six or ten weeks) and long term (at six months) in sedentary and active subjects demonstrated improved aerobic fitness.<sup>(15)</sup> In contrast to intensive training, continuous training at moderate intensity is characterized by being prolonged, oriented toward aerobic activity, and submaximal intensities determined by long periods of time or distance, which can be monitored through VO2 max, heart rate, distance, and time.

In women during pregnancy and postpartum, it reduces the risk of preeclampsia, gestational hypertension, gestational diabetes, excessive weight gain during pregnancy, complications during childbirth, postpartum depression, and complications for the newborn. Additionally, it is noteworthy that physical activity has no adverse effects on birth weight nor entails a higher risk of prenatal death.<sup>(7)</sup> Moreover, regarding the type of exercise practiced, women tend to engage in individual and aesthetic sports such as aerobics or swimming, while men mostly participate in collective and competitive sports like soccer or basketball, choices that respond to created stereotypes.<sup>(4)</sup>



Specifically, the influence of physical activity (PA) has been demonstrated on various factors that affect academic performance, such as memory, attention capacity, or executive functions, due to the reduction that exercise causes in cortisol levels (a hormone linked to decreased attention capacity), the production of endorphins to create more favorable attitudes for learning, or improved blood flow to the brain, which enhances the stimulation of neurotrophic factor.<sup>(6)</sup>

Quality of life (QoL) is defined as a multidimensional condition (physical health, psychological state, level of independence, social relationships, personal beliefs, and environment) aiming to improve QoL in the elderly by socializing activities, which will enhance motivation and perseverance.<sup>(2)</sup> In addition to physical exercise as such, there is a wide variety of therapies and complementary activities to obtain benefits.<sup>(3)</sup>

The practice of physical exercise promotes increased cerebral blood circulation, contributing to the synthesis of neurotrophins, synaptogenesis, the formation of the first synapses, while exercise produces dopamine that participates in a broad spectrum of behaviors, including motivation and reward expectation, improving resistance to negative stress. It reflects a state of greater tolerance against stressors from daily activities.<sup>(8)</sup>

Cognitive performance also benefits from engaging in physical activity. Tasks with higher cognitive demands and that involve gross motor skills have a more significant effect. All this allows for improved brain irrigation, attention, and concentration, but no changes in executive functions have been observed.<sup>(6)</sup> It continues to be demonstrated that PA contributes to the prevention of chronic diseases and is associated with overall physical health,<sup>(15)</sup> one of the important processes is the comprehensive evaluation of QoL, assessing bio-psycho-social aspects that include multiple domains such as functional, biomedical, cognitive, emotional, social, and environmental. Consequently, reducing health costs is even more relevant. The main issues have been anxiety, depression, poor sleep quality, and physical inactivity, as well as immune system alterations. In this situation, it is essential to keep this generation engaged in PA with an emphasis on improving QoL.<sup>(2)</sup>

In physical activity, when exercising, the entire organism is being engaged, whether at a chemical, energetic, emotional, or intellectual level.<sup>(3)</sup> The WHO considers schools fundamental for the development of healthy lifestyle habits and the implementation of prevention programs to reinforce healthy eating habits conducive to achieving excellent quality of life.<sup>(18)</sup> Promoting greater physical activity among young people, taking into account motivations for participating in exercise.<sup>(4)</sup> Motor development refers to the changes over time in motor behavior that reflect the interaction of the human organism with the environment.<sup>(3)</sup>

Sport and physical activity are factors that positively influence physical health: prevention of cardiovascular risks, chronic diseases, obesity, cancer, osteoporosis, and degenerative diseases such as dementia and Alzheimer's disease; and mental health: anxiety, depression, and stress reduction; improvement in cognitive abilities, social skills, self-concept, and resilience.<sup>(5)</sup> Physically, higher levels of PA have been linked to better body composition, greater bone mineral density, or increased insulin sensitivity. On the other hand, its cognitive benefits have been widely demonstrated, as maintaining an active lifestyle helps reduce anxiety and stress levels, improves self-esteem, attention capacity, and executive functions.<sup>(6)</sup>

Concluding that the practice of sports and physical activity as a healthy habit can facilitate therapeutic and preventive progress based on the promotion of healthy lifestyles.<sup>(5)</sup> The benefits of physical activity, interval training, and moderate continuous training in sedentary and physically active adults. Physical activity involves any bodily movement that leads to an increase in energy expenditure in metabolism, while interval and moderate continuous training can be used to control the training load programs (intensity, volume, and rest).<sup>(15)</sup>

Other variables such as volume and progression are prescribed, with the recommendation to first increase exercise volume, then intensity, and finally the type of exercise. Additionally, the recommended progression rate in an exercise program depends on health status, fitness level, training responses, and individual exercise program goals.<sup>(2)</sup> Furthermore, progression should be gradual to allow adaptations to increased training volume, which can reduce the risk of injuries and promote adherence to the exercise program. The possible differential motivations for exercising between men and women suggest the existence of stereotypes and gender roles that affect the practice of physical activity, which favors negative attitudes of many women towards sports. Women tend to engage in individual and aesthetic sports like aerobics and swimming, while men mostly participate in team and competitive sports like soccer or basketball, choices that respond to stereotypes created around women.<sup>(16)</sup>

Simultaneously, engaging in physical activity benefits mental and psychological health. People who report moderate to vigorous PA levels are less likely to experience high levels of perceived stress, burnout, depressive symptoms, and anxiety compared to individuals with a sedentary lifestyle. Likewise, PA is considered a protective factor against the onset of symptoms associated with personality disorders, work or academic stress, social anxiety, lack of social skills, and reduced work and social impact.

In particular, it was analyzed whether exercise could be the missing piece of the puzzle for deviating addictive behaviors by increasing dopaminergic function and hippocampal volume through the release of neurotrophic factors (brain-derived neurotrophic factors, BDNF). For example, exercise, by stimulating neuroplasticity, could redirect sugar addiction away from real reward pathways.<sup>(8)</sup> Currently, a reduction in physical activity among the adult population has been shown to be associated with inadequate nutrition, increased stress, body weight changes, and disrupted sleep and eating patterns.<sup>(15)</sup>

In the future, the potential benefits of exercise and physical activity against addictive behaviors should be evaluated. In particular, dose-response studies will help identify physical activity programs in terms of frequency and intensity associated with the greatest therapeutic benefits for each particular patient. There are numerous reasons to lace up your shoes and go for a run. Improvement or maintenance of the neuro-cognitive state of older adults is one of the key components constituted by physical activity. Engaging in physical and recreational activities has become a focus of health promotion in this population sector due to the significant health benefits it offers.<sup>(11)</sup>

Controlled physical activity in older adults by a trained professional contributes to an improved quality of life, prevents cognitive decline and cardiovascular diseases, and reduces the development of Alzheimer's, depression, and anxiety. Additionally, it maintains emotional and physical balance and boosts self-esteem. It is necessary to promote health at all levels to foster the construction of healthy habits and encourage a culture of movement and health.<sup>(10)</sup>



Age causes bodily deterioration, but physical activity can be performed at any age without major issues, as training principles will follow a series of steps and a personalized methodology to obtain greater benefits. Moreover, the workload and stimuli will always be suited to the needs and goals of the individuals involved; in this case, physical activities can be tailored to the needs of older adults.

The WHO, in its intervention recommendations for older adults, indicates that all older adults should engage in regular physical activity, at least 150-300 minutes of moderate-intensity aerobic activity or at least 75-150 minutes of vigorous-intensity aerobic activity. As part of their weekly activity, older adults should include multi-component physical activity emphasizing functional balance and moderate to high-intensity strength training three or more days a week to enhance functional capacity and prevent falls.<sup>(2)</sup>

Physical aspects may include: the development of strength, balance, flexibility, and coordination to avoid falls and injuries. Emotionally, it allows for improved self-esteem and controls cognitive decline, while socially, it fosters interaction that prevents the development of depression or degenerative diseases.<sup>(12)</sup>

In Mexico, it is anticipated that between the years 2000 and 2050, the proportion of older adults will increase from 7 % to 28 %, with a dependency ratio of older adults estimated at 50,6 % for the latter year. Particularly in the state of Nuevo León, even though it is considered one of the most economically developed regions in the country, the dependency rate of older adults will exceed the national average starting in 2010.<sup>(10)</sup> Regular exercise helps achieve various physiological adaptations with beneficial effects at the cardiovascular and metabolic levels, favoring the health of those who engage in it.<sup>(22)</sup> It has been shown that after only a few hours of exercise using this method, expression of proteins targeting skeletal muscle is activated, leading to increased glycogen storage during exercise; it is attributed that following two weeks of this method results in improved performance.<sup>(15)</sup>

On the other hand, it is stated that old age should never be considered a pathological state but rather a natural process, as it describes a phase of life that involves the passage of time and the emergence of physical consequences. It is a period in which a person is forced to change their lifestyle, adapting to a new social and psychological situation. Quality of life (QOL) is defined as a general state of satisfaction that includes physical, mental, and social well-being.<sup>(10)</sup>

While there is no single definition regarding QOL, it is widely considered a multidimensional condition (physical, emotional, social, interpersonal), variable over time and across the life cycle, underlying both subjective and objective factors.<sup>(15)</sup> It is not clear when one enters old age, and the understanding of this concept is increasingly detached from chronological age, being more individually and socially structured.<sup>(10)</sup> The lack of physical activity in older adults is associated with diseases such as hypertension, diabetes, obesity, physical deficiencies, and mental illnesses.<sup>(11)</sup>

The role of regular exercise in preventing age-associated cognitive decline and reversing damage linked to mild cognitive impairment increases functional capacity in older adults. This improvement leads to better quality of life and participation in organized activities, which is understood as the overall level of well-being perceived by each individual across various domains of their life, considering the impact on their current health status.<sup>(15)</sup>

Higher levels of physical activity are correlated with improvements in cognitive abilities (decision-making and verbal fluency) and brain structure, increasing muscular strength, endurance, and overall physical function, thereby reducing the hospitalization risk for older adults.<sup>(11)</sup> The benefits are directly proportional to health, self-esteem, and the ability to maintain independence among peers. The results obtained demonstrate the presence of benefits within this population related to physical activity practice.

Utilizing the Tinetti scale shows that the balance of older adults is between adaptive and normal, considering that the maximum score for balance is 16, guiding the strengthening of physical activity programs to enhance the basic balance capability in older adults and prevent falls.<sup>(14)</sup>

Benefits include maintaining muscular fitness, cognitive functions, cardiorespiratory health, balance, body weight, and obesity control; these collectively reduce the risks of cardiovascular diseases, chronic respiratory diseases, diabetes, high blood pressure, metabolic syndrome, colon cancer, depression, and all causes of mortality.<sup>(15)</sup> Changes in sleep patterns may be part of the normal aging process; however, many of these are often related to pathological processes distinct from usual aging.<sup>(9)</sup> A study conducted in 122 countries affiliated with the WHO shows a notable disparity in physical inactivity prevalence, which is higher in women than in men, and evidence indicates that older adults are less active than young adults.<sup>(15)</sup>

Sleep disturbances can trigger depressive episodes, increase fall frequency, worsen cognitive functioning (especially attention and memory), slow motor responses, and decrease quality of life; mainly, moderate and vigorous levels of physical activity favor dimensions of health-related quality of life. There is a need to promote greater physical activity among young populations, taking into account the motivations for engaging in exercise.

Non-communicable diseases typically have a close relationship with obesity and the lack of physical activity; nonetheless, through the influence of physical activity and nutrition workshops, significant reductions in these conditions have been achieved, as these diseases are known to be chronic and rarely emphasized for treatment. The benefits of physical exercise for individuals with type 2 diabetes mellitus (DM2) and its evident positive effects on affected individuals are well documented.<sup>(19)</sup>

Childhood overweight and obesity rates have risen in recent years in Colombia, which is alarming given the relationship between these nutritional problems and the development of chronic diseases later in life. Studies evaluate obesity levels and attempt to counteract them through physical activity and training plans detailed in each study. Results vary by study, with positive outcomes reported; however, it is unclear whether physical activity entirely counters obesity.<sup>(17)</sup>

Among the pillars for the comprehensive treatment of this disease, the practice of physical exercise (PE) stands out. Various authors recommend PE for patients with DM2 due to its significant beneficial effects, which patients do not always recognize as part of their disease therapy.<sup>(19)</sup> Comparisons of the Global Physical Activity Questionnaire (GPAQ) and the International Physical Activity Questionnaire Short Form (IPAQ-SF) show that both questionnaires serve similar purposes: facilitating monitoring of physical activity and providing quantifiable values to measure physical activity and sedentary behavior in the population.<sup>(21)</sup>

## CONCLUSIONS

Physical inactivity among adults and adolescents is expected to increase, with a relative reduction of 10 % by 2025 and 15 % by 2030. According to estimates, if physical activity levels do not increase, public health systems will incur costs of around USD 300 billion between 2020 and 2030. Globally, obesity has nearly doubled since 1980. In 2014, 10 % of men and 14 % of women aged 18 and older were obese, with a high percentage of children being overweight (40,6 % of children aged 6-9 in 2019). Research in Mexico indicated that 59,4 % of obese children had three to four televisions in their homes and slept less than normal-weight children. Physical exercise (PE) is a planned and structured physical activity with a final goal, serving as a preventive tool against systemic diseases and a protective factor for physical and mental health; moreover, motivations for engaging in PE are fundamental and can be influenced by gender. Different motivations for exercise exist depending on gender, highlighting the relationship between exercise participation and the perception of physical and mental health.

## BIBLIOGRAPHIC REFERENCES

1. Verdugo Carrasco C, Pizarro Mena R. Efectos del ejercicio físico sobre la calidad de vida en personas mayores. Revisión de la literatura. Mem. Inst. Investig. Cienc. Salud [Internet]. 1 de abril de 2022 [citado 03/10/2025]; 20(1): 118-34. Disponible en: <https://revistascientificas.una.py/index.php/RIIC/article/view/2458>
2. Rodríguez Torres ÁF, Rodríguez Alvear JC, Guerrero Gallardo Héctor I, Arias Moreno ER, Paredes Alvear AE, Chávez Vaca VA. Beneficios de la actividad física para niños y adolescentes en el contexto escolar. Rev Cubana Med Gen Integr [Internet]. 2020 Jun [citado 03/10/2025]; 36(2). Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0864-21252020000200010&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-21252020000200010&lng=es)
3. Rodríguez Milián A, Moré Estupiñán M, Gutiérrez Pairol M. La educación física y la educación para la salud en función de la mejora del rendimiento físico de los estudiantes. *Revista Universidad y Sociedad* [Internet]. 2019 [citado 03/10/2025]; 11(1): 410-415. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S2218-36202019000100410&lng=es&tlng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2218-36202019000100410&lng=es&tlng=es)
4. Bisquert Bover M, Ballester Arnal R, Gil Llarío MD, Elípe Miravet M, López Fando Galdón M. Motivaciones para el ejercicio físico y su relación con la salud mental y física: un análisis desde el género. *International Journal of Developmental and Educational Psychology* [Internet]. 2020 [citado 03/10/2025]; 1(1): 351-360. Disponible en: <https://www.redalyc.org/journal/3498/349863388035/html/>
5. Chacón-Cuberos R, Zurita-Ortega F, Ramírez-Granizo I, Castro-Sánchez M. Physical Activity and Academic Performance in Children and Preadolescents: A Systematic Review. *Apunts* [Internet]. 2020 [citado 03/10/2025]; 139: 1-9. Disponible en: [https://doi.org/10.5672/apunts.2014-0983.es.\(2020/1\).139.01](https://doi.org/10.5672/apunts.2014-0983.es.(2020/1).139.01)
6. [Barbosa Granados SH](#), [Urrea Cuéllar AM](#). Influencia del deporte y la actividad física en el estado de salud físico y mentaluna. *Revista de Ciencias Sociales* [Internet]. 2018 [citado 03/10/2025]; (25): 141-160. Disponible en: <https://dialnet.unirioja.es/servlet/articulo?codigo=6369972>

7. Torres Ibarguen JM. Impacto De Un Programa De Actividad Fisica Para La Salud De Los Estudiantes De Una Institución Educativa En Bogota Colombia. *Ciencia Latina* [Internet]. 13 de junio de 2023 [citado 08/10/2025]; 7(3): 1613-28. Disponible en: <https://ciencialatina.org/index.php/cienciala/article/view/6302>
8. Codella R. *El ejercicio estimula la actividad del cerebro y desvía la atención por el azúcar* Salud (i) *Ciencia* [Internet]. 2018 [citado 03/10/2025]; 23(1): 70-71. Disponible en: [https://www.researchgate.net/publication/330310048\\_Exercise\\_talks\\_with\\_the\\_brain\\_and\\_distracts\\_it\\_from\\_sugar\\_-\\_El\\_ejercicio\\_estimula\\_la\\_actividad\\_del\\_cerebro\\_y\\_desvia\\_la\\_atencion\\_por\\_el\\_azucar](https://www.researchgate.net/publication/330310048_Exercise_talks_with_the_brain_and_distracts_it_from_sugar_-_El_ejercicio_estimula_la_actividad_del_cerebro_y_desvia_la_atencion_por_el_azucar)
9. Cepero Pérez I, González García M, González García O, Conde Cueto T. Trastornos del sueño en adulto mayor. Actualización diagnóstica y terapéutica. *Medisur* [Internet]. 2020 Feb [citado 08/10/2025]; 18(1): 112-125. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1727-897X2020000100112&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-897X2020000100112&lng=es).
10. Aguilar-Chasipanta WG, Analuiza-Analuiza EF, García-Gaibor JA, Rodríguez-Torres ÁF. Los beneficios de la actividad física en el adulto mayor. Revisión sistemática. *Polo del Conocimiento* [Internet]. 2020 Feb [citado 08/10/2025]; 5(12): 680-706. Disponible en: <https://polodelconocimiento.com/ojs/index.php/es/article/view/2116>
11. Mosqueda Fernández, Andres. Importancia de la realización de actividad física en la tercera edad. *Dilemas contemporáneos: educación, política y valores*. [Internet]. 2021 [citado 08/10/2025]; 9(spe1): 00036. Disponible en: [https://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S2007-78902021000800036](https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-78902021000800036)
12. Ortiz Fernández D, Alzola Tamayo A, Costa Samaniego C del C, Charchabal Pérez D, Valverde Jumbo LR. Actividad física y su impacto en la calidad de vida en adultos mayores ecuatorianos. *CCM* [Internet]. 13 de junio de 2022 [citado 08/10/2025]; 26(2). Disponible en: <https://revcocmed.sld.cu/index.php/cocmed/article/view/4403>
13. Beneficios de la actividad física en la salud del adulto mayor: revisión sistemática (Original). *rev olimpia* [Internet]. 2022 Oct. 7 [cited 09/10/2025]; 19(4):1-13. Available from: <https://revistas.udg.co.cu/index.php/olimpia/article/view/3508>
14. Andrade Farfán P, Balda Zambrano DH. Actividad física para mejorar el equilibrio de los adultos mayores del programa de envejecimiento activo del cantón Chone. *Sinapsis* [Internet]. 30 de junio de 2022 [citado 09/10/2025]; 21(1). Disponible en: <https://revistas.itsup.edu.ec/index.php/sinapsis/article/view/582>
15. Ortiz-Pulido R, Gómez-Figueroa JA. La actividad física, el entrenamiento continuo e intervalo: una solución para la salud. *Revista Salud Uninorte* [Internet]. 2017 [citado 09/10/2025]; 33(2): 252-258. Disponible en: <https://www.redalyc.org/journal/817/81753189017/html/>
16. Barbosa-Granados SH, Aguirre-Loaiza H. Actividad física y calidad de vida relacionada con la salud en una comunidad académica. *Pensamiento Psicológico* [Internet]. 2020 [citado 09/10/2025]; 18(2): 79-91. Disponible en: [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S1657-89612020000200079](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1657-89612020000200079)

17. Bisquert Bover M, Ballester Arnal R, Gil Llario MD, Elipe Miravet M, López Fando GM. Motivaciones para el ejercicio físico y su relación con la salud mental y física: un análisis desde el género. Revista INFAD de Psicología [Internet]. 2020 Jun. 9 [cited 09/10/2025]; 1(1): 351-60. Available from: <https://revista.infad.eu/index.php/IJODAE/article/view/1792>
18. Chuga Caiza BD. La actividad física y la obesidad prematura en niños de escolar . Mentor [Internet]. 12 de mayo de 2023 [citado 09/10/2025]; 2(5): 243-64. Disponible en: <https://revistamentor.ec/index.php/mentor/article/view/5498>
19. FAJARDO BONILLA E, ÁNGEL ARANGO LA. Prevalencia de sobrepeso y obesidad, consumo de alimentos y patrón de actividad física en una población de niños escolares de la ciudad de bogotá. Rev.Fac.Med [Internet]. 2012 June [cited 09/10/2025]; 20(1): 101-116. Available from: [http://www.scielo.org.co/scielo.php?script=sci\\_arttext&pid=S0121-52562012000100011&lng=en](http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0121-52562012000100011&lng=en).
20. Hernández Rodríguez J, Domínguez Yuri A, Mendoza Choqueticlla J. Efectos benéficos del ejercicio físico en las personas con diabetes mellitus tipo 2. Rev Cubana Endocrinol [Internet]. 2018 Ago [citado 09/10/2025]; 29(2): 1-18. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1561-29532018000200008&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1561-29532018000200008&lng=es).
21. Wei Min L, Gutiérrez Cayo H. Efectividad del cuestionario global e internacional de actividad física comparado con evaluaciones prácticas. Rev Cubana Invest Bioméd [Internet]. 2020 Jun [citado 09/10/2025]; 39(2). Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0864-03002020000200023&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-03002020000200023&lng=es)
22. Ybaceta Menéndez YC, Rodríguez Deschapelles L, Fornaguera Carrera T, González Santos LT, Soria Pérez R. Comportamiento del sobrepeso y la obesidad en niños y adolescentes. Policlínico Docente Héroes del Moncada. 2019. Rev. Med.Electrón. [Internet]. 2021 Ago [citado 09/10/2025]; 43(4): 941-953. Disponible en: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1684-18242021000400941&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242021000400941&lng=es).