

Revisión

The play as a therapeutic physical activity in the elderly

El juego como actividad física terapéutica en los ancianos

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Recibido: 20/08/2020 | **Aceptado:** 14/11/2020

Abstract:

Due to the social importance of working with the elderly in Ecuador, a systematic review of the literature that includes their characteristics and the importance of play for this age group will establish the theoretical basis of this means of therapeutic physical activity. The aim of this work is to reveal the importance of the play as a means of therapeutic physical activity for older adults. For this purpose, it has been reviewed the databases: Dialnet and Google Academic, in addition to both classic and contemporary books, master and doctoral theses, as well as websites using the descriptors: games, therapeutic physical activity and older adults. Three basic thematic areas have been established for the review, the first one is directed to the topic: Older adults and their characteristics, the second one to The therapeutic physical activity, and the third one to The Game as a didactic means. In total, 40 specific references to the topics addressed have been analyzed (articles, books, thesis and websites). The main conclusion is that play as a tool in the practice of therapeutic physical activity is the least treated, so the research should be directed to exploit the potential of this medium.

Key words: play; physical activity; older adults

Resumen:

Debido a la importancia social de trabajar con el anciano en Ecuador, una revisión sistemática de la literatura que incluye sus características y la importancia de obra para este grupo etario

establecerá las bases teóricas de lo que significa la actividad física terapéutica. El objetivo de este trabajo es revelar la importancia del juego como un medio de actividad física terapéutica para los adultos mayores. Para este propósito, se han repasado las bases de datos: Dialnet y Académico de Google, además de libros clásicos y contemporáneos, tesis de maestría y doctorales, así como sitios web que usan los descriptores: los juegos, actividad física terapéutica y adultos mayores. Se han establecido tres áreas temáticas básicas para la revisión: el primero se dirige al tema: Los adultos mayores y sus características, la segunda, a La actividad física terapéutica y el tercero, a El Juego como medio didáctico. En total, se han analizado 40 referencias específicas dirigidas a los temas (artículos, libros, tesis y sitios web). La conclusión principal es que el juego como herramienta en la práctica de actividad física terapéutica es el menor tratado, de ahí que la investigación debe dirigirse para aprovecharse del potencial de este medio.

Palabras clave: juego; actividad física; adultos mayores

Introduction

Population ageing is a phenomenon present in practically all parts of the world. It began in Europe in the 19th century as a result of the Industrial Revolution, which emerged in the 18th century and led to better working conditions, sufficient wages and new health policies (Chávez et al. 2009).

In Latin America, this process becomes evident as of the 1970s, with the incorporation of technical-scientific advances, used in the diagnosis and treatment of multiple diseases, as well as the implementation of programs aimed at decreasing infant mortality rates and family planning strategies, which to date have decreased birth rates. (Chávez et al. 2009).

Aging is a process that is characterized by the progressive loss of the organism's capacity to adapt and its reserves, making it more fragile in the face of stressful situations and, therefore, more vulnerable to disease (Zarzosa and Castro, 2006). Aging is a complex and varied process that depends not only on biological causes, but also on social living conditions and a series of material and environmental factors, among others.

Globally, an accelerated aging process is observed, according to the United Nations Population Fund (UNFPA) human development report offered in 2016, between 1970 and 2015, this population sector increased from 3.6 billion to 7 billion. In 2018, there were 953 billion people aged 65 or older, representing the 13% of the world's population.

In the final declaration of the Third Regional Intergovernmental Conference on Ageing in Latin America and the Caribbean, held in San José from May 8 to 11, 2012, the seventh agreement seeks to improve social protection systems so that they respond effectively to the needs of older

persons, by promoting actions in the areas of social security, health and social services, aspects taken from Núñez, Ramírez y Gordo (2018).

This is why demographic trends highlight population aging as the most outstanding change that has occurred in the world's population structure in recent decades (United Nations, 2002). Life expectancies have increased, projecting the proportion of people over 60 years of age. If current trends continue, this group of individuals will constitute 20% of the world's population by 2050.

According to Macías (2009), it is necessary to find a way to guide people to reach an active aging by analyzing the sustained increase of the population of older adults during the last years and the increase of chronic non transmissible diseases, as an added element.

Currently, there are numerous investigations developed by different authors related to the elderly, among these it can be cited to Ceballos (2016) with the proposal of a program of physical activities according to the possibility of three groups of elderly people, according to conditions typical of old age, aspects shared by Sanchez (2004).

Other authors such as Lig Long (2010); Aguilera (2011); Socarrás (2011); Gafas (2011); Rodríguez et al. (2013); Sariago (2014); Ceballos (2016), have all delved into the subject of aging and the elderly. However, in the bibliographic review carried out so far, it was found that the existing references on the use of games during the physical and therapeutic practice of this population group are insufficient, though; it is known the potential of play as a means of physical activity in various population groups where the elderly is not exempt.

In accordance with the above, the following problem is identified: how has the bibliographic treatment of play as a therapeutic physical activity in the elderly behaved?

What was previously discussed shows the need to carry out this updated bibliographic study, with the aim of: carrying out a systematization of the bibliographic behavior on play as a therapeutic physical activity in the elderly.

Method

1. Design. The principles were used to carry out a systematic review (reference), searching the databases, such as: Dialnet and Google Academic, Dialnet and Google Academic, as well as both classic and contemporary books, master's and doctoral theses and websites, trying to obtain a synthesis of the scientific knowledge contributed to the field of physical activity in the elderly today. The articles were identified using the following descriptors: games, physical activity and older adults.

2. Inclusion and exclusion criteria. For inclusion, the papers that answered affirmatively to the following reasons were considered: a) does the study deal with the themes of games, physical

activity and older adults? (Title and summary); b) was the study published in Spanish or English? (Content)

Those works that do not fit into the three thematic areas established for the review have been excluded: the first one addressed to the topic older adults and their characteristics, the second one to the therapeutic physical activity and the third one to the Game as a didactic means.

The review has been carried out using the sequence of steps described in figure 1, so the inclusion criteria have been taken into account twice: the first time, in the title and abstract; and the second time, in the full text making an exhaustive analysis of each article, to counteract the scarce scientific development on the topic.

As a result of this review, the most relevant data from specific paddleball studies exclusively circumscribed to the 21st century (from the year 2000 to 2020) have been collected. Of the references reviewed, 40 have been registered as specific to the elderly, gambling and physical activity (articles in indexed journals, books, bachelor's, masters and doctoral theses and official websites).

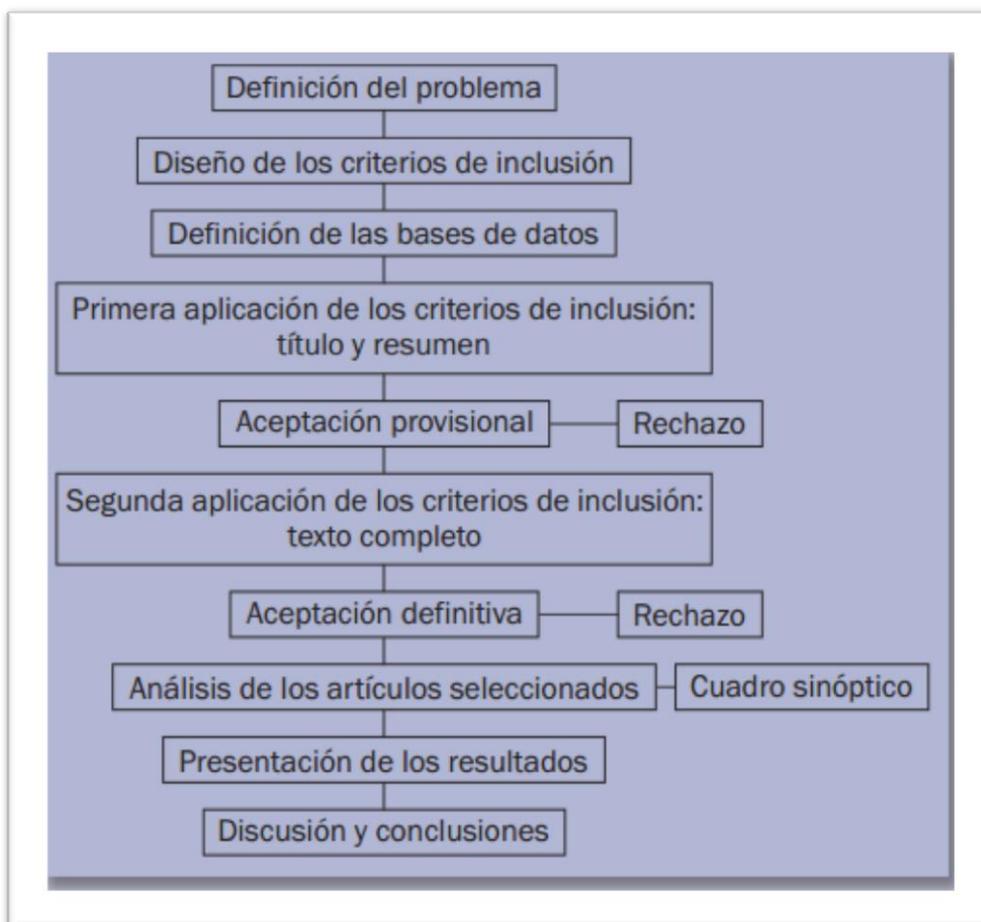


Figure 1. Flow chart followed to perform a systematic literature review.

Source: extracted from Costa, et al. (2008)

Development

1-The elderly and their main characteristics

In accordance with the diversity of terms used to denominate this stage of life, this work shares what is described by Chávez et al. (2009), who proposes that the older adult starts at 60 years of age or more and it is an evident aging process, with diverse apparatuses and systems with different intensity and at different moments". Aspects that are in agreement with the Pan American Health Organization in its publication "Plan of Action in Health and Aging: The Elderly in the Americas 1999-2002.

For a greater understanding in the study of the older adult, the classification established by Chavez et al, (2009) is shared, since this age group, due to the diversity of factors that negatively or positively affect their health status and physical performance capacity, are older adults with particular physical-functional characteristics, regardless of their chronological age.

A theoretically healthy older adult is considered to be one who has achieved a "successful old age", since he or she maintains total independence, even though he or she may suffer from some chronic-degenerative condition, but which by its very nature does not represent a limitation for the performance of daily life activities and is easily medically controllable.

Sick older adult. Is a carrier of one or more unstable chronic-degenerative conditions, which require strict medical control, without serious complications, with some limitations to the realization of daily activities, but maintaining some social and family independence?

A frail older adult is a person who suffers from one or more chronic degenerative diseases, usually complicated, who has lost his independence and remains confined to the family or is institutionalized.

According to Ceballos (2016), the changes observed in the middle and mature age are manifested above all in the decrease of the metabolic processes, the reduction of the functional capacity of all the organs and systems, the decrease of the glands of internal secretion and the different variations in the appliance of the muscles apparatus.

1. An irreversible phenomenon that includes structural and functional changes.
2. Common to all species.
3. It is a process that begins at the moment of conception after reaching reproductive maturity.
4. The result of a decrease in the capacity to adapt.
5. The increase of the probabilities of death as time passes, as a final consequence of the process.

Llanez (2017), refers to: the changes that occur in the older adult, specifically those of the musculoskeletal system: decrease in muscle and bone tissue, strength, speed and coordination,

joint mobility. In addition, the body's recovery time after applying a physical load is extended, there is a decrease in muscle tone, the tendency to muscle fatigue increases, and bones become more fragile (widening of the spinal canal). Also, the appearance of osteoporosis and osteomalacia, the progressive alterations of the spine and the arthritis (associated to sprained fractures, repeated micro traumatisms), fundamentally.

On the other hand, Estrabao (2020) agrees that the changes are based on the fact that as people get older, there are modifications in their state of health: the structures are altered, the functions of the cells and the tissues of all the systems of the organism are reduced, and changes appear that affect: the active metabolic mass, the size and function of the muscles, the maximum O₂ volume; the skeletal system, breathing, the kidneys, the sexual glands.

This same author considers that the sensorial receptors, the bone marrow and the red blood cells (alteration of the red blood cells, at level of structure and form never diminish in number by the fact to age). Volume and weight of all organs and tissues, water content of tissues (decreases, so there is sagging, weight loss and wrinkles).

On the other hand Osorio (2020), states that the respiratory system, also suffers alterations are directed towards: decreases lung expansion, increases the risk of lung infections (very common pneumonia), decreased weight and volume of the lungs. Reduction in the number of alveoli, decreased dispensability of the chest wall, which will give problems, and can not make a deep breath, alteration of the lung parenchyma, there is a decrease in respiratory capacity: decreased oxygen at the tissue level (causes reduced rate of hemoglobin). In correspondence with what has been discussed, it is concluded that there are numerous biological alterations that present in older adults as a result of aging.

2- Main considerations of therapeutic physical activity in the elderly

According to Dupotey criteria, Coll, Dupotey (2019), systematizing Parlebas, consider that physical activity is: "the discipline of human movement is a physiological state that requires the rapid mobilization and distribution of various elements, to ensure the adequate supply of energy that will allow the muscular work to be done" P.165.

The main currents of physical activity and health as commented by authors such as: (Airasca (2002); Garcés (2006); Macías (2009), agree in asserting that currently three major perspectives of the same are addressed. The preventive one, the one oriented to the well-being and the rehabilitative one (that is to say therapeutic). In the current scenario of the older adult, one would suffer to practice it in some of its three perspectives in correspondence to their state of health.

In agreement with the previous thing, the diminution of the physical activity is a sedentary style of life, that appears as the people age, from the 20 or 30 to the 80 years, is a fact, and one of

the reasons is the limitation due to chronic problems of health that are accentuated with the age. As addressed by Barrios C, Albors J, Aliaga J, et al. (2000).

There are numerous risk factors that are associated with being in the age group of the elderly; however, it is shared by Mora et al. (2007) that "a sedentary lifestyle and low physical condition mean that many older subjects are subject to maximum levels of demand during their daily activities. In these, a small decrease in their degree of physical activity can lead them from a state of functional independence to a state of inability to carry out their daily activities, needing assistance or external help to do so" pp-21.

In this sense, several studies have proven that the regular practice of physical exercise, in some of its modalities or perspectives, delays the appearance of these changes, due to the beneficial effect it has on the general deterioration produced by aging, maintaining a functional capacity that allows the elderly to lead an independent and active life, according to the notes of Viana et al. (2004).

This is in accordance with the ideas of Rikli, R., Jones, C. (2001) who asserts that "the physical abilities that usually occur with age can be prevented, even reversed, through appropriate attention to our levels of condition and therapeutic physical activity" (p.17).

The same author states that therapeutic physical activity is a very effective means of preventing, treating, and delaying the inevitable deterioration of functional capacity in older subjects.

These aspects coincide with those proposed by the American college of sport medicine. ACSM (2001) who assures that: "the benefits of regular exercise and physical activity contribute to a healthier and more independent lifestyle for older adults, greatly improving their functional capacities and quality of life" (p.6).

These criteria are in agreement with Ceballos (2016), who argues that the subject who practices physical exercises with preventive and therapeutic purposes in a systematic way, it is difficult to fix a concrete age and this is due to the functional biological rejuvenation. We can affirm that aging does not take place in the same way in all the organs of the same subject and, as well, in the different subjects.

This coincides with the proposal made by Núñez, Ramírez y Gordo (2018), who refers to the fact that Therapeutic Physical Culture is currently taking on general and particular tendencies in sports training and Physical Education, and that it is necessary to relate work with the Elderly to Physical Education in the elderly, with particularities established by changes determined by aging and social relations at these ages.

On the other hand (Landinez, et al. 2012; Subervier, 2017), they assure that the elderly need a preventive or therapeutic physical activity to maintain, treat and improve their levels of autonomy

and motor functionality, where the effect of physical exercises combat the consequences of aging by providing the elderly with a longevity and an aging as healthy as possible and active. Therefore, therapeutic physical exercise improves the muscular skeletal, osteoarticular, cardiocirculatory, respiratory, endocrine, metabolic, immunological and psychoneurological function; in the same way it prevents, treats, controls and improves the symptoms of chronic diseases, minimizes biological changes related to aging, reduces stress and anxiety, improves self-confidence and self-esteem, increases longevity and decreases disability, among other benefits, aspects that coincide with those systematized by: Sillero (2010); Díaz (2011); Landinez, et al. (2012); Narváez (2017); Subervier (2017); Díaz, Gordo, Dupotey (2020). Other authors such as Dupotey, Coll, Dupotey (2019), have addressed in their studies the beneficial effects of therapeutic physical activity in improving flexibility, stability and joint mobility, increases capacity and resistance to work, qualities that encourage better performance in daily life activities.

From what has been systematized, it can be stated that the modalities of therapeutic physical activity are dissimilar; however, this work shares those proposed by Popov (1988) who argued that the main means are: "gymnastic exercises, natural factors (the sun, air and water), applied sports exercises and games" (p. 28).

The latter is essential, because due to the characteristics of prophylactic and therapeutic physical activity, the emotional factor must be achieved in the senior class, varying the means; changing the initial positions, using different objects and games of different types (in the group classes). For this, the kindness, preparation and perseverance of the physical activity teacher or doctor towards the sick or elderly people who systematically practice therapeutic physical activity is very important, where praise and demonstration of the improvement of their habits and motor qualities play a preponderant role.

In accordance with this last idea, the benefits of games for the practice of physical activity by the elderly are discussed in the following section.

3- Play as a means for older adults who practice physical activity for therapeutic purposes

The word game, according to Ramirez (2012), starts with the words Jocus: which means lightness, frivolity, pastime and Ludus: which is the act of playing. On this basis the Real Academia Española defines it as: The action of playing, pastime or fun, its definition is something not defined. According to him, there are other definitions given by various authors since antiquity:

Physiological concept: it is the activity performed by superior beings without an apparently utilitarian end, as a means to eliminate their excess energy. However, when a child is ill, he does not lose interest in the game and continues to play.

Psychological concept: it is a spontaneous and disinterested activity that demands a freely chosen rule to be fulfilled or a deliberate obstacle to overcome. The game has as essential function to procure to the child the moral pleasure of the triumph that when increasing its personality, places it before its own eyes and before the others.

Sociological concept: the game can be defined as a voluntary activity or occupation that is carried out within certain established limits of space and time, attending to freely accepted rules. According to Del Toro (2013), in the cognitive base of the game we find a series of mechanisms that allow the individual to access aspects as necessary as symbolism, intentionality and understanding of desires and beliefs in himself and in others.

Another important aspect is that addressed by Ruiz (2012), states that games occupy a prominent role as a means of physical activity for its great biological, psychological and educational value, for the dissimilar instructional and educational potential that these contain both in the emotional, as volitional and attitudinal.

For their part, Jerez, Ramirez and Proenza (2013), reaffirm that the game has educational aspects, which makes it both a prophylactic and therapeutic tool in different diseases and people at risk of contracting them. However, there are numerous characteristics and qualities that should be taken into account for its use for the purposes outlined above, where they excel:

The recovery: it is necessary to take into account the occupation and lifestyle of the older adult who uses it, to know if it is done as a physical-play activity to satisfy their needs and recovery from the fatigue caused by daily work or for therapeutic purposes, for the latter it is necessary to adapt the recovery to the characteristics of the age group and associated diseases that may have.

Dramatization: with the game, actions are reproduced, created, staged, and they feel identified with each and every one of the movements and emotions; in this way the world of the game itself is situated parallel to the real world from which they extract what interests them and they learn from it and prepare for it.

Relaxation: as the game recovers from the daily work, it also relaxes; from the moment the activity is planned as a spring to give free rein to the body, the mind and it is isolated for that moment.

Creation-recreation work: within the total time available to the older adult, play is a more important activity; with it he remembers other times, he relates and creates his own world and

his own structures, either it is fantasy, or they reproduce the world of adults, which increases his creative capacity.

In this last direction the game is used by clinical psychologists and therapists both fiscal and occupational for the treatment of psychic disorders, neurological diseases and in the elderly, which are often of affective origin Ludotherapy. Even in cases of organic diseases, play also has its place as a benefactor.

In agreement with the previous thing it is possible to be raised that the game presents potentialities to be a therapeutic tool in the different common spaces that share the greater adults. So there are some attempts in its use that will be discussed below.

For Torres (2011), the game plays an important role in the way of rehabilitation because it makes it more affordable and allows forgetting worries, getting out of stress, and developing as people. It is the best method to attract older adults who are frustrated by some illness because it is an excellent driver to make friends.

On the other hand Osorio (2020), comments that there are evidences of the utility of the game in all the ages and with high significance in the greater adult, these represent a necessity in the life of the man of today, but it is much more important that they form inseparable part of the daily activities of the same ones, with them it is possible to extend the life, in addition, to provide sensation of well-being and to activate the functions of the organs and systems of the human body, doing pleasant the load of the years.

This same author states that the experiences acquired through the participation in activities that generate satisfaction last in time. It is recommended that the games are carried out outdoors so that the natural biological stimulus can also act. In general, games contribute to:

1. Improve physical condition.
2. Increase breathing capacity.
3. Oxygenate all body tissues.
4. Release stress load on the nerves.
5. Eliminate stress.
6. Improve man's adaptation to environmental conditions.
7. Strengthen the muscular system, preserve and improve joint mobility.
8. Maintain the integrity of the habits and motor skills.

In his research Osorio (2020), proposed a set of games for the physical rehabilitation of bronchial asthma in the elderly. Its main result was the compilation of ten respiratory reeducation exercises and eight games that favor the muscles involved in breathing. The feasibility of the proposal was evaluated through the socialization workshop and the results obtained allow us to

propose that it offers application possibilities. However, this author did not put his proposal into practice, which limits the scope of his results.

On the other hand, Yumar, Ramirez and Perez (2020), used the game as a viable alternative in the rehabilitation of older adults with gonarthrosis. Results that evidence that the game has significant potential to be used with this purpose in the studied population group.

Diaz, Gordo, Dupotey (2020), in their review study systematized the benefits of gambling in the rehabilitation of degenerative diseases.

Those aspects are shared by the authors of the present work and on those arguments; it is worked on the elaboration of methodological tools that contribute to the improvement of the game use as a fundamental means in the class of therapeutic physical activity in the elderly.

Conclusions

The review carried out allows the authors to ensure that there is evidence of the importance of play as a therapeutic physical activity in the elderly because it allows us to stimulate the activities of the elderly program and thus contribute to increasing the quality of life.

The results of the literature search indicate that there is a slight increase in publications related to play as therapeutic physical activity in the elderly, mainly in master's and diploma works, aspects that give a level of reliability to the sources extracted.

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