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Orientation walking, a way to improve cognitive functions in the older adults

Marcha de orientación, una vía para mejorar las funciones cognitivas en el adulto mayor

Caminhada de orientação, uma forma de melhorar as funções cognitivas em idosos

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ABSTRACT

The usefulness of physical recreation with a recreational nature is a fundamental means to improve health, cognitive functions and quality of life. Based on a diagnosis applied to a sample of 19 older adults, they presented insufficiencies in memory processes; in this sense, it was found that the proposals for physical-recreational activities aimed at this age group were very general, did not take into account morpho-functional characteristics and were limited in the variety of recreational offers. The objective of this research was to improve cognitive functions, which are related to memorization, in older adults from the Matahambre community, in the Songo la Maya municipality, through the orientation walk.



The analytical-synthetic and inductive-deductive methods were used as theoretical methods; and as empirical ones, documentary analysis, observation, survey and interview that allowed obtaining the data and information necessary for the correct implementation of the orientation walk by taking into account the characteristics of this population group. The proposal demonstrated the orientation walk as an important tool that stimulated memory abilities and memories, by taking into account the likes, preferences, needs and interests of the older adult, being attractive to them and allowing them to remember vital aspects or emotions of their personal life.

Keyword: physical-recreational activities, cognitive functions, orientation walking

RESUMEN

La utilidad de la recreación física con carácter lúdico resulta un medio fundamental para mejorar la salud, las funciones cognitivas y la calidad de vida. A partir de un diagnóstico aplicado a una muestra de 19 adultos mayores, estos presentaron insuficiencias en los procesos de la memoria; en tal sentido, se comprobó que las propuestas de actividades físico-recreativas dirigidas a este grupo etario fueron muy generales, no atendieron las características morfofuncionales y estuvieron limitadas en la variedad de ofertas recreativas. La presente investigación tuvo como objetivo mejorar las funciones cognitivas, que se relacionan con la memorización, en los adultos mayores de la comunidad Matahambre, del municipio Songo la Maya, a través de la marcha de orientación. Se emplearon como métodos teóricos el analítico-sintético e inductivo-deductivo; y empíricos, el análisis documental, la observación, la encuesta y la entrevista que permitieron obtener los datos e informaciones necesarias para la correcta realización de la marcha de orientación al tomar en cuenta las características de este grupo poblacional. La propuesta demostró la marcha de orientación como una importante herramienta que estimuló las capacidades memorísticas y los recuerdos, al tomar en cuenta los gustos, preferencias, necesidades e intereses del adulto mayor, resultarles atractiva y permitirles recordar aspectos o emociones vitales de su vida personal.

Palabra clave: actividades físico-recreativas, funciones cognitivas, marcha de orientación



RESUMO

A utilidade da recreação física de caráter recreativo é um meio fundamental para melhorar a saúde, as funções cognitivas e a qualidade de vida. A partir de diagnóstico aplicado a uma amostra de 19 idosos, estes apresentavam insuficiências nos processos de memória; Neste sentido, constatou-se que as propostas de atividades físico-recreativas dirigidas a esta faixa etária eram muito generalistas, não tinham em conta características morfofuncionais e limitavam-se na variedade de ofertas recreativas. O objetivo desta pesquisa foi melhorar as funções cognitivas relacionadas à memorização em idosos da comunidade Matahambre, no município de Songo la Maya, por meio da caminhada de orientação. Os métodos analítico-sintético e indutivo-dedutivo foram utilizados como métodos teóricos; e empírica, análise documental, observação, inquérito e entrevista que permitiram obter os dados e informações necessários à correta implementação da marcha de orientação tendo em conta as características deste grupo populacional. A proposta demonstrou a caminhada de orientação como uma importante ferramenta que estimulou habilidades e memórias, ao levar em conta os gostos, preferências, necessidades e interesses do idoso, sendo atrativa para ele e permitindo-lhe lembrar aspectos vitais ou emoções de sua vida pessoal vida.

Palavra-chave: atividades físico-recreativas , funções cognitivas, caminhada de orientação

INTRODUCTION

Recreation has acquired a social and educational value, both from an individual and collective point of view and links enjoyment with health, which is why it is increasingly used to avoid diseases, develop physical capacities, promote moral values, unite communities and promote the quality of life of human beings (Quintana et al., 2021). In addition, it promotes the development of different motor skills, interacting with the environment and actively playing individually and in groups, improving body perception, control of one's own movements, coordination, balance and location in time and space.



Recreation contributes to lower levels of stress, anguish and/or anxiety, which is why it serves human beings not only to activate the body, but also to keep the mind in a healthy balance. At the same time, it helps to learn to live with others and has a significant function in social education; likewise, it contributes to the creation of a lifestyle in the population that benefits man in his physical capacity, health, economy, communication levels and human development, as essential factors in local development (Fuentes and Bestard, 2021).

Recreation is a way that combats boredom, overcomes leisure time, releases tension, allows to understand and comprehend the social reality in which the subject is immersed; one of these ways to meet the leisure needs of human beings is physical recreation, which in recent years has gained essential importance in any society, due to its potential for developing human enrichment that affects the quality of life of the population in general. In this sense, in addition to being a pleasant activity, it also serves as a means of promoting knowledge, skills, habits, qualities and provoking emotions, so the formation of personality becomes a happy experience.

Currently, physical recreation has become an inexhaustible source to improve the quality of life of the Cuban population, with scientifically dosed programs that guarantee the physical and spiritual needs of the great masses, specifically in the popular councils in both the urban and rural.

The process of physical recreation in its essence is designed to cover all population groups in society, although in Cuban reality, this is weighted to a greater extent for children, young people and adults and, to a lesser extent, for older adults, who receive care through Physical Culture programs. This forces to attend to this last group, from physical recreation since the demographic trend demonstrates its constant growth in Cuba; since the end of 2013, the nation was one of the oldest countries in Latin America, with 19% of its population. The social challenge that this represents is due to the needs it generates from an economic, biomedical and social point of view.

For this reason, policies and methods have been established with medical-social projections that make these people feel more useful to the family and society. Consequently, physical



recreation is a pillar for reaching old age with adequate health, as it positively compensates muscle mass, respiratory dynamics, temperature, blood volume, peripheral resistance and the ability to respond to stress.

This progressive increase in life expectancy presents the important challenge of defining the meaning and social roles of older adults in the coming decades (Mosqueda, 2022). This challenge implies the need to make social arrangements that allow older people to develop all their potential in search of successful aging. At this time, older adults are the beginning of a new generation that combines a more rational education, linked to better living conditions, which makes them more sensitive in the search for the art of living.

With aging, people are more susceptible to acquiring some diseases, mainly chronic degenerative diseases such as arthritis, osteoporosis, cardiovascular diseases, memory loss and obesity, among others, and in many cases, these diseases cause disabilities that have an impact on the life of the individual.

It is important to consider that memory consists of various phases that deteriorate with advancing age when one begins to lose short and long term, to forget important information from everyday life, to not recognize usual places in the home or community in the who lives, among others. According to Quintana et al. (2021) these phases are:

- Coding: in this phase the information that comes from the different sensory channels is processed and represented in the memory system.
- Retention: it is the phase in which the information represented in memory takes a place in sensory memory, short-term memory, or long-term memory; so that this information can be recalled and used immediately or later.
- Retrieval: this phase allows access and recall of information previously stored during the retention phase.



Physical-recreational activities help older adults maintain cognitive and psychomotor skills, enhance creativity, feel useful, raise self-esteem, enjoy new interests, promote interpersonal relationships, well-being and satisfaction (Aguilar et al. , 2020).

Currently, numerous actions are promoted in favor of the study and care of the older adults, such as those of Aguilar et al. (2021); Araque et al. (2021) ; Herrera et al. (2023); Villarreal et al. (2021) that point more towards objectives of a medical, demographic or psychological nature; but there is still insufficient work on the importance of contributing to the search for other ways that enrich care for the older adults, from a social perspective, where an increase in the quality of life is achieved, from exchange, socialization, healthy entertainment and recreation, among other aspects.

Based on this bibliographic background and the application of various diagnostic instruments, it was proven the existence of insufficiencies in care of the older adults of the Matahambre community of the Songo la Maya municipality, which are specified in:

- Limited variety of recreational offers for this population group that do not take into account their likes, preferences or morpho-functional characteristics.

Inadequate orientation of physical -recreational activities aimed at improving memory in older adults in order to raise their quality of life:

- Few physical-recreational activities are carried out aimed at improving the cognitive reserve of the older adults.

La Rosa et al. (2021) highlights that the training of cognitive functions allows the stimulation of memory processes, by applying structured exercises and situations, with increasing difficulty, adapted to the cognitive abilities of each individual in order to improve it; this also allows the training, in certain cases, of those capacities in the process of degenerating. This approach leads to verifying and confirming the main objective set out in this research: improving the cognitive reserve in older adults in the Matahambre community, in the Songo la Maya municipality, through orientation walking as a recreational activity.



MATERIALS AND METHODS

The type of study was explanatory and non-experimental, transactional and descriptive in design with a group. The population was 65 older adults, of which an intentional sample of 19 was chosen, integrated into the "Raíces de Cagüairán" circle of grandparents, for 29% of a population of 350. The sample was made up of retirees, with pathologies such as: high blood pressure, memory and concentration failures, osteoarthritis and asthma.

The intention of the sample was determined by:

- Female (12) and male (7) people, aged between 65 and 75 years, with memory problems.
- Voluntariness to participate in the research.
- Likes to take walks.
- Not present symptoms or neurological alterations that make it difficult to carry out the research.
- No history of alcoholism or drug abuse.

To develop this proposal, it was necessary to use a set of research methods and techniques. From the theoretical level:

Analytical-synthetic: to theoretically base the research, it was started from intellectual operations, to decompose and unite parts of the research complex, collect data and information located in the bibliography consulted on the main criteria, contributions and limitations of the topic under study, and to be able to systematize the theoretical foundations that favor the proposal to improve cognitive reserve in older adults in the community.

Inductive-deductive: to establish the general and particular reasoning of the process of physical recreation in the community and the orientation walk for older adults with the purpose of improving their cognitive reserve.

From the empirical level:



Document analysis: to determine the main difficulties that occur in the recreation process, from the community perspective. The documentation related to the Strategic Planning of the National Sports and Recreation Institute (INDER) was analyzed. The INDER programs, demands and needs related to care for the older adults were reviewed as a necessary analysis to face this challenge.

Observation of classes: to know under what conditions the classes are taught, the number of grandparents who attend and whether, in addition to physical exercises, activities were carried out from a physical-recreational point of view, aimed at the morphofunctional needs and interests of the older adult.

Survey of the teacher and the participants of the Grandparent's circle: with the aim of identifying deficiencies regarding morphofunctional attention, memory failures and the frequency of these insufficiencies in cognitive memory.

Group interview with the older adult: to understand their disposition, with respect to carrying out physical-recreational activities in their free time, their likes and recreational preferences.

Descriptive mathematical statistical method: the percentage calculation made it possible to process and analyze the different instruments that were used to know the likes about the physical-recreational activities that were carried out in the community and those that are their preference. The data processing carried out brought the researchers closer to the evaluative indicators that allowed measuring the improvement in cognitive reserve, based on the application of the orientation walk as a recreational and novel way implemented in this community.

RESULTS AND DISCUSSION

The analysis of the results of the scientific observation carried out on the classes of the "Raíces de Cagüairán" circle of grandparents allowed to describe and characterize the physical-recreational activities implemented as: routine, attached to a prescribed plan, and



did not take into account the likes and the preferences or bio-psychosocial needs of the group.

Five classes were observed to find out if the physical exercises included physical-recreational activities aimed at stimulating the cognitive functions of the older adults, under what conditions they were taught and the number of grandparents who attended them. It was found that the Physical Culture teacher encouraged exercises in classes, but there was little participation, especially among the male sex; different types of physical exercises were carried out, but few recreational activities aimed at stimulating cognitive functions, and the teacher did not delve into knowing what recreational activities could be developed with this population group, aimed at these purposes.

In the group interview, it was learned that the physical activities were dominated by exercises to address their physical pathologies and strengthen their muscles, with a frequency of twice a week, and no other type of recreational activity aimed at stimulating cognitive functions during class.

When surveying the teachers, they agreed to highlight that they are unaware of various recreational activities to stimulate the cognitive functions of the older adults and recognized the value that adapted orientation walking can provide to improve their quality of life in the family and community.

In the surveys carried out on older adults, it was found that, although recreational activities were carried out, the likes and preferences of the participants were not always taken into account, the same physical activities were regularly repeated and there were no initiatives aimed at stimulating their cognitive functions, for example, through orientation walking.

The analysis of documents allowed to determine the main difficulties of recreation from the community perspective, the planning of recreational activities aimed at stimulating cognitive functions, based on the orientation walk and adapting the demands and needs established by the INDER related to care for the older adults.



After analyzing the results and assuming that it is a necessity for the older adults to recreate themselves, in order to raise their quality of life, by stimulating their cognitive functions, it was considered necessary to develop physical-recreational actions to achieve their incorporation into them, especially those related to the orientation walk. The general purpose was to enhance the sociability of the older adults and stimulate their cognitive functions by seeking to raise the level of physical and psychological autonomy to improve their quality of life.

In this population group, there is a deterioration in physical coordination capacity that considerably affects their physical and motor performance; strength, cognitive abilities, endurance and flexibility decrease; there is a reduction in the length of the walking step and unbalanced motor skills that mark disorders in physical coordination that cause falls or a sedentary lifestyle, for fear of suffering one of them; the deterioration in brain functions that causes various brain syndromes, recognized by the collective name of dementia; and the functions that suffer the greatest effects are memory, thinking, recognition, language, planning and personality (Aguilar, et al., 2021).

The normal aging process is accompanied by declines in physical function, mobility and endurance, leading to varying degrees of loss of independence. The studies by Aguilera et al. (2020); Mosqueda (2022) indicate that a balanced and planned program must include activities aimed at achieving each of the three objectives of good physical coordination: increasing flexibility, increasing strength and increasing cardiovascular endurance.

In an analysis carried out, Toledo et al. (2020) state that joint mobility is one of the components that most influences walk alterations and the risk of falls and constitutes the causes of the greatest morbidity and mortality in people over 65 years of age. These arguments served as the basis for the structuring of the physical exercises that make up the methodological alternative proposed to improve the orientation walk of older adults.

Training for the stimulation of cognitive functions, through orientation walking in the older adults



The orientation walk satisfies the needs of improving the cognitive functions of the older adults. The coordinated, interrelated and comprehensive planning of orienteering sports, with a systemic nature, constitutes one of the contemporary contributions of pedagogy in the sports sector.

Therefore, attention to orienteering sports, seen as activities that contribute to the healthy occupation of free time, must respond to closely related and articulated planning, in such a way that allows their effective realization. Orientation is the fact of arranging an object or a person in a certain position with respect to the cardinal points and finding the good direction to reach the intended location (Tamayo et al., 2022).

Orientation is content that elevates spatial preparation, decision making, knowledge of symbolic language and cognitive involvement to another level; appears as a great alternative where physical effort is perfectly combined with mental effort and older adults can get around on foot or by any means of transportation, they can go alone, in the company of a group of friends or family and put it tests their cognitive functions to locate where they are and recognize where they are going. When moving they must follow the clues and signs that indicate the route to follow and in this way they discover new places. Without a doubt, it is an activity to work on cognitive cultural development at this stage of life. The orientation walk can be considered a recreational activity, which has the following properties:

- It provides physical effort.
- It covers overcoming in a specific way, depending on the time and route to be overcome.
- It is necessary for the participant to acquire mastery in orientation techniques.

The orientation walk consists of moving along an itinerary, according to the meaning of the clues that are found during the walk and that indicate the behavior to follow at each moment, until reaching the goal. The intensity of movement of older adults is in accordance with their physical conditions and their ability to constantly observe, so as not to lose any clues and avoid deviating from the correct direction. It is an individual event and against



the clock, the starting time between one participant and the next can range between one and five minutes, as stipulated by the organizers of the walk.

This activity has no age limit or material resources complications. It is a cultural physical activity, which places the participant in any terrain to carry out a previously established route, with no other means than a card to write down the clues and signs they find.

It is convenient for its teaching:

- Make known the signals that will be used. Signs can be artificial or voluntary (left by man or animal on the path along which he moves), and natural or involuntary (agreed upon in advance and placed by man along his path in the places where he wants to indicate the path). that has been followed).
- Carry out small practices and competitions.
- Show all the shapes that can be used to make signs.

The orientation walk allows to activate memory, it is a cognitive process through which the information that is collected can be encoded, stored and ultimately recovered when it is needed. As part of the analysis carried out, it was found that the physical-recreational activities carried out did not take into account the insufficiencies presented in the memory of this age group nor were they aimed at improving cognitive reserve. The different instruments applied made it possible to reveal likes and preferences, and the evaluative indicators that emerged from data processing allowed to compare the improvement of cognitive reserve, from the application of orientation walking as a recreational and novel way implemented in this community.

In the age group studied, it was possible to analyze that the processes of encoding and memory retention are two of the phases in which difficulties were verified and that there was a delay in understanding the information received to record in their memory; due to this, short-term memory retention presented deficiencies in remembering the guidance provided. This result is explained by verifying that low brain performance is a consequence of the loss of neurons due to age and can be reversed with training, to reestablish neuronal



connections or produce new ones and be able to establish new paths for the arrival of information to us. cerebral cortex where activities such as memory are processed.

The orientation walk was carried out over a distance of 200 meters, as long as it was authorized by the family doctor, 14 tracks were used on the route, which was drawn by considering the pathologies of the participants and the characteristics of the terrain.

Methodological indications:

The orientation walk is a recreational activity that must take into account its own adaptations, depending on the population group to which it is directed. It is agreed with Toledo et al. (2020) when they state that orientation walking allows to activate memory by helping to remember signs of the route to follow. Therefore, it was carried out in two moments:

1. Explain what the orientation walk consists of, what types of tracks can be used, the rules for their layout and the benefits it brings to the older adults.

It is convenient for its teaching:

- Make known the signals that will be used.
- Carry out small practices and competitions.
- Show all the shapes that can be used to make signs.

2. The route must be done in duos, the departure time between each pair must be five minutes, they walk at a normal pace and the winner is the couple that finds the greatest number of clues and identifies the trees and animals found on the route.

Means used: ballots and pencils.

Organization of the activity:

- Recognition of the place, which does not present danger for this age group.



- The terrain must have reference points such as: cinemas, shops, monuments, trees, parks, offices.
- A sketch of the route is made.
- Topographic symbols are studied.
- It is located on an enlarged map of the area.
- All the signs needed along the route are made.
- Written messages are prepared for each team, included in the envelopes, according to the number of participants.
- The signs are made on cardboard.
- The competitors' card is conceived in a practical way.
- The departure of the teams is done by draw, as well as the individual tests.
- The departure time depends on the number of teams, but is never more than 10 minutes between each departure.
- In the main point the departure and arrival times are noted.
- Sound signals can be used, with the knowledge of the participants, which in turn can be emitted in the event of an accident, fall, or disorientation of the older adult.
- It must be had a first aid kit.

Rules for its layout:

1. The signs are made on the ground, with the tip of a knife, branch or stone, with sticks, marks with chalk or crayon.
2. The tracks or signs are placed less than one meter high.
3. It is usually drawn to the right of the road.
4. They must be visible and not attract the attention of strangers.
5. It must be remembered exactly the placement of the last sign, to maintain direction and find the correct placement of the next one.
6. The distance between signs depends on the nature of the terrain, such as terrain that is difficult to observe: 4 to 5 meters.
7. In rocky places: 8 to 10 meters.
8. In sites with trees: 20 to 25 meters.



9. In open land: 30 meters and up.
10. The signs must have an approximate size between 10-15 centimeters.

Rules for tracking:

1. Write down the signs found on the corresponding card.
2. The pace must be moderate, since if the intensity is greater than their observation capacity, some of the signs or clues may be omitted.
3. The last one to pass erases and destroys the signs, and also collects the messages and objects placed. It must be carried out by an organizer of the activity that is out of competition.

Organization methodology:

- It is recommended that the practitioner adopt his step, be relaxed, comfortable and calculate the length of his step.
- A land that does not have swamps, ravines, or ditches is recommended.
- All possible signs must be made along the route to avoid accidents.
- The signs and clues that are made on cardboard are legible.
- The exit is by lottery.
- The departure time depends on the number of teams, never more than 10 minutes between each one.
- The exit signal may be audible, but all participants must know it.
- Design the participants' card in a practical way.
- Two men and two women from each team compete.

Assessment:

Once the route was finished, the clues found by the older adult were counted, duly marked on the card and multiplied by four points, the time used in the route was multiplied by two points, and was subtracted from the total points of the tracks; then, if the participant found false clues, they were multiplied by eight points and subtracted from the total points, to reach the final result.



True clues found or good clues: they were those that were placed on the field and the older adult marked them on his card.

Clues found false or bad clues: these were the ones that the older adult marked on his card that do not exist in the field.

Formula:

Pis. V x 4 (true clues or good clues)

Pis. F x 8 (false clues or bad clues)

T x 2 (time)

T. Pts = (total points as final result)

Formula: T. Pts= (PVx4) (PFx8) (Rx2) = Final result. The one with the highest result won.

According to Villareal et al. (2021), for the cognitive stimulation of older adults, it is efficient to carry out the following prior activities:

- Perform simple tasks that help mental activation.
- Work on temporal, spatial and personal orientation so that the older adults can locate themselves at all times and know where they are and who or what is around them.
- Performing exercises that stimulate memory. In the short term it can be stimulated with repetition games, but it must be not forgotten to stimulate remote memory, to make the older adult remember events from his/her past, places visited, descriptions of the city, location of hospitals, schools, hotels, his/her housing, parks, historic centers.
- Distance calculation exercises, in which the older adult is in relation to reference points, are ideal for strengthening memory.
- Use basic reasoning.
- Reading signs and setting reference points can be very helpful at this time: reading, dictating, journaling.



With the development of the orientation walk, it is about promoting the value of self-esteem, solidarity, mutual help, companionship, camaraderie, will, friendship, through interpersonal relationships, sharing moments of joy and pleasure to forget problems and reduce the stress caused by daily tasks. This opinion is also shared with Jarque (2020).

With this physical-recreational activity linked to the social and natural environment, it is had the opportunity to carry out tasks full of experiences, saturated with educational values that make it solidly constructive, to achieve a greater approach to the natural environment that achieves knowledge and understanding of it, identification and love towards nature. This opinion is shared by Fuentes et al (2021), who also considers that the methodological planning of the orientation walk in the older adults enables socialization with the social and physical environment of the community where they live.

The results obtained in this study coincide with those carried out by Villareal et al. (2021) when considering it necessary to cognitively stimulate the memory of the older adults with simple and previous activities that make their subsequent memory orientation more efficient.

CONCLUSIONS

The bibliographical references allowed to theoretically substantiate the benefits that physical-recreational activities bring to the increase in quality of life, especially, the orientation walk as a way to improve the cognitive reserve in the older adults of the Matahambre community, in the Songo la Maya municipality.

The application of research instruments provided the necessary elements to confirm the existence of the problem raised that demonstrated the low participation of older adults in physical-recreational activities aimed at stimulating cognitive functions in this community.

The orientation's walk offered the possibility of profitably occupying the free time of the older adults; it allowed them to encourage their cognitive reserves and achieve socialization with people of the same age group who may suffer from similar insufficiencies.



REFERENCES

- Aguilar Bolívar, A., florez Villamizar, J. A., & Saavedra Castelblanco, Y. (2021). Capacidad aeróbica: Actividad física musicalizada, adulto mayor, promoción de la salud. *Retos*, 39, 953-960. <https://doi.org/10.47197/retos.v0i39.67622>
- Aguilar-Chasipanta, W. G., Analuiza-Analuiza, E.F., García-Gaibor, J.A. & Rodríguez-Torres, A.F. (2020). Los beneficios de la actividad física en el adulto mayor: Revisión sistemática. *Polo del Concimiento* (Edición núm. 53), 5(12), 680-706. <https://dialnet.unirioja.es/servlet/articulo?codigo=8042577>
- Araque-Martínez, M. Ángel, Ruiz-Montero, P. J., & Artés-Rodríguez, E. M. (2021). Efectos de un programa de ejercicio físico multicomponente sobre la condición física, la autoestima, la ansiedad y la depresión de personas adultas-mayores. *Retos*, 39, 1024-1028. <https://doi.org/10.47197/retos.v0i39.83282>
- Fuentes Jordán, R., & Bestard Revilla, A. (2021). La perspectiva educativa en la recreación comunitaria. *PODIUM - Revista De Ciencia Y Tecnología En La Cultura Física*, 16(2), 478-489. <https://podium.upr.edu.cu/index.php/podium/article/view/1072>
- Herrera Cisneros, P., Castillo Ruiz, L.E., Abarca Carrasco, R.G. & Heredia Aguirre, S.I. (2023). Intervención de salud en adultos mayores de un área rural. *Revista Cubana de Medicina Militar*, 52(3). <https://webcache.googleusercontent.com/search?q=cache:Fe2F8Pd8DcQJ:https://revmedmilitar.sld.cu/index.php/mil/article/view/2639&hl=es&gl=cu&client=firefox-b-d>
- Jarque, A., Gómez, N. & Aguilar, L. (2022). Juegos recreativos para el adulto mayor. *Revista Ciencia y Deporte*, 7(1). <http://dx.doi.org/10.34982/2223.1773.2022.v7.no1.007>
- La Rosa Arias, M., Zaldívar Castellanos, L. A., Martínez González, O., & Gordo Gómez, Y. M. (2021). Juegos para elevar la motivación hacia la actividad física en adultos mayores. *PODIUM - Revista De Ciencia Y Tecnología En La Cultura Física*, 16(2), 436-450. <https://podium.upr.edu.cu/index.php/podium/article/view/1037>
- Mosqueda, A. (2022). Importancia de la realización de actividad física en la tercera edad. *Dilemas contemporáneos: educación, política y valores*, 9(1). <https://doi.org/10.46377/dilemas.v9i.2943>



- Quintana, I.; Juanes, B. (2021). Conjunto de actividades físico recreativas para el mejoramiento de la calidad de vida en las clases de los Círculos de abuelos del municipio de Cienfuegos. *Revista Conrado*, 17(S3), 376-382.
<https://conrado.ucf.edu.cu/index.php/conrado/article/view/2177>
- Tamayo, R., Fernández, L. & Vázquez, S. (2022). Juegos para el tratamiento de la orientación espacial en las clases de Educación Física. *PODIUM - Revista De Ciencia Y Tecnología En La Cultura Física*, 17(3).
http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1996-24522022000300860
- Toledo, M., Concha, E., & Ruíz, V. (2020). Programa de actividad física para la mejora de la fuerza de brazos en adultos mayores. *Revista Conrado*, 16(72), 217-221.
<https://conrado.ucf.edu.cu/index.php/conrado/article/view/1234>
- Villarreal-Ángeles, M. A., Moncada-Jiménez, J., & Ruiz-Juan, F. (2021). Mejora de variables psicológicas en Adultos Mayores mediante Pilates. *Retos*, 40, 47-52.
<https://doi.org/10.47197/retos.v1i40.74307>

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The author declares that there are no conflicts of interest.

Author's contribution:

The author is responsible for writing the work and analyzing the documents.



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