

Pedagogical alternative for the preservation of physical condition in older adults at home

Alternativa pedagógica para la conservación de la condición física de adultos mayores en el hogar

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ABSTRACT

Background: the physical condition of older adults at home during the vacation period is affected, making it necessary to implement actions for its recovery.

Objective: to design a pedagogical alternative for the preservation of physical condition in older adults within the home context during the vacation period.

Methods: a pre-experimental investigation was carried out at the Aurelio Janet Torres Sports Complex in the city of Santa Clara, Cuba, between 2021-2025, as part of the project "Care for the older adult" from the Marta Abreu Central University of Las Villas. Theoretical and empirical methods were used: documentary review, observation, questionnaire for older adults, in-depth interview with the director of the sports complex, and specialist criteria for product assessment. From the mathematical-statistical level, percentage analysis and measurement through functional tests were used. Methodological triangulation as a qualitative technique made it possible to contrast information from different methods.

Results: an interactive, flexible, concrete, dialectical, systemic, cooperative, and creative pedagogical alternative was designed, structured in three stages, with in-person and blended guiding activities, for the preservation of physical condition in older adults at home during the vacation period.

Conclusions: the pedagogical alternative fostered unity, independence, and safety through strength, balance, coordination, and flexibility exercises; it was satisfactorily assessed for its quality, relevance, and applicability by the consulted specialists.

MeSH: demographic aging; geriatrics; quality of life; strategies; health promotion; national health programs; health programs and plans; range of motion, articular; education, medical

RESUMEN

Fundamento: la condición física de adultos mayores en el hogar durante el periodo vacacional se afecta, por lo que es necesario aplicar acciones para su recuperación.

Objetivo: diseñar una alternativa pedagógica para la conservación de la condición física de adultos mayores en el contexto del hogar durante el periodo vacacional.

Métodos: se efectuó una investigación preexperimental en el Combinado Deportivo Aurelio Janet Torres en la ciudad de Santa Clara, Cuba, entre 2021-2025, como tarea del proyecto "La atención al adulto mayor" de la Universidad Central Marta Abreu de Las Villas. Se emplearon métodos teóricos y empíricos: revisión documental, observación, cuestionario a adultos mayores, entrevista en profundidad al director del combinado, y el criterio de

especialistas para la valoración del producto. Del nivel matemático-estadístico se utilizó el análisis porcentual y la medición desde las pruebas funcionales. La triangulación metodológica como técnica cualitativa posibilitó contrastar informaciones de métodos.

Resultados: se diseñó una alternativa pedagógica interactiva, flexible, concreta, dialéctica, sistémica, cooperativa y creativa, en tres etapas, con actividades orientadoras presenciales y semipresenciales, para la conservación de la condición física de adultos mayores en el hogar durante el periodo vacacional.

Conclusiones: la alternativa pedagógica propició unidad, independencia y seguridad mediante ejercicios de fuerza, equilibrio, coordinación y flexibilidad; fue valorada satisfactoriamente por su calidad, pertinencia y aplicabilidad por los especialistas consultados.

DeCS: envejecimiento de la población; Geriatría; calidad de vida; estrategia; promoción de salud; programas nacionales de salud; planes y programas de salud; rango del movimiento articular; educación médica

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INTRODUCTION

Currently, population aging occurs gradually and involves fertility, mortality, and migration, which, in combined action over time, determine the growth and age structure of the population, of utmost importance for the economic and social planning of any country.⁽¹⁾

In a study on aging, Arés Muzio⁽²⁾ mentions that some authors define older adults or the elderly as the age group starting at 60 years, others starting at 65-70. Still others simply state it is a social definition. The United Nations considers a person over 65 years old in developed countries, and over 60 in developing countries, as elderly.

In older adults, aging causes a series of restrictions due to the conditions that become common at this stage, but deficiencies also occur in certain functions from a biological, psychological, and social perspective.⁽³⁾ Consequently, physical performance decreases, a series of physiological changes occur at the musculoskeletal, cardiovascular, respiratory, and metabolic levels that reduce agility, coordination, and balance. Furthermore, effort capacity is reduced, and diseases arise due to a lower neuro-psychic capacity for adaptation to the environment. For all these reasons, physical activity is necessary at this stage of life.

Physical activity, as any bodily movement involving energy expenditure, must be performed in a planned, repeated, and deliberate manner. Its practice in older adults helps control and prevent arthritis, heart disease, stroke, type 2 diabetes, osteoporosis, among others.

In the same direction, Márquez *et al.*,⁽⁴⁾ point out that quality of life connects the practice of physical activity with the improvement of physical and mental well-being in older adults; they argue that maintaining physical condition is essential for healthy aging.

Physical condition is the ability to perform daily physical activities with vigor and alertness, without excessive fatigue, and with sufficient energy. Its maintenance in older adults enables the development of physical activity itself, enhancing their functionality and independence.

Once the systematic period in the community physical activity area for maintaining this condition in older adults linked to the sports complex has ended, there may be absences and a decrease in the performance they had achieved and maintained, due to various factors, including the vacation period.

These effects are observed through functional tests; however, physical activity can be developed from the home context, with family support, at different times, or with peers (neighbors) in the area. The study aims to design a pedagogical alternative for the preservation of physical condition in older adults within the home context during the vacation period.

METHODS

The pre-experimental research was conducted at the Aurelio Janet Torres Sports Complex, belonging to the Capitán Roberto Fleites University Polyclinic in the city of Santa Clara, between September 2021 and September 2025, as part of the project "Care for the older adult" from the Marta Abreu Central University of Las Villas. The population consisted of the 25 older adults belonging to the Older Adult Program. The participants' consent to participate in this study on community physical activity was taken into consideration.

The following methods were used:

Theoretical level:

- Analytical-synthetic: allowed synthesizing the characteristics of older adults, the preservation of their physical condition at home, and its regularities.
- Inductive-deductive: made it possible to reach generalizations about the preservation of physical condition in older adults at home.
- Historical-logical: facilitated the evolution of various criteria regarding aging and physical condition in older adults within the home context.
- System approach: enabled the conception and construction of the pedagogical alternative with its stages and interrelationships.
- Modeling: contributed to the formation of the graphic representation of the pedagogical alternative.

Empirical methods:

- Document review: allowed searching for information from the National Institute of Sports (INDER) regarding the physical condition of older adults.
- Observation: used to assess the attendance of older adults in community physical activity during the vacation period and the state of their physical condition.

- Survey of older adults: provided determination of the criteria of older adults regarding attendance at community physical activity for preserving their physical condition during the vacation period.
- In-depth interview: allowed verifying the criteria of the sports complex director, regarding the preservation of physical condition in older adults in community physical activity and after the vacation period.
- Pre-experiment: facilitated the application of the pedagogical alternative.

Specialist criteria: the methodology for obtaining specialist criteria, as assumed by Pereira Ruiz,⁽⁵⁾ was adopted.

The 22 consulted specialists are graduates in Physical Culture, specialized in Community Physical Activity (18), Physical Education (1), Contemporary Physical Education (2), and Physical Recreation (1). Their professional experience ranges between 6 and 35 years; they perform different functions and hold scientific and teaching categories.

The aspects to be assessed were: general objective, presentation of the stages, description of in-person activities, description of blended activities, evaluation of the physical condition of older adults, and the digital material to support activities at home. The indicators: quality, relevance, and applicability; and the categories: Inadequate (C1), Somewhat adequate (C2), Adequate (C3), Quite adequate (C4), and Very adequate (C5).

Mathematical-statistical methods: percentage analysis was used for processing the research data. Measurement allowed measuring the level of physical condition of older adults using functional tests before and after the application of the alternative.

Methodological triangulation as a qualitative technique was used to contrast different types of information, which enabled the determination of regularities based on the methods used.

The following dimensions were assumed to verify the current state of physical condition in older adults:

I. Cognitive dimension

- Knowledge of the characteristics of older adults
- Knowledge of community physical activity
- Knowledge of Inder regulations for maintaining physical condition in older adults

II. Procedural dimension: skills or abilities for performing physical activity.

III. Attitudinal dimension: willingness to preserve physical condition in the home context during the vacation period.

The regularities determined (strengths and deficiencies) from the methods used made it possible to present, considering the research reflections of Sierra Salcedo *et al.*,⁽⁶⁾ a pedagogical alternative structured in stages for the preservation of physical condition in older adults within the home context during the vacation period.

RESULTS AND DISCUSSION

The analysis of the Update of the Plan of the Comprehensive Physical Education Program for Older Adults in the new context, period 2020-2024 from Inder,⁽⁷⁾ confirmed that there are methodological indications for sports work with older adults and the frequency of work in community physical activity. However, no specifications are made for the preservation of their physical condition during the vacation period and in the home context.

Rodríguez Varis *et al.*⁽⁸⁾ apply these indications regarding the physical condition of older adults in their research; they add how to evaluate it and the importance of personalized exercise prescription at home, although they do not make a proposal.

Observation of activities in the community physical activity area was conducted to verify the attendance of older adults during the vacation period. Daily attendance was low (28%) compared to periodic attendance. Non-attendance (72%) was very high during the vacation period. The willingness of those who participated in area activities to preserve their physical condition stands out.

The confirmation of the impact on the attendance of older adults to the area for preserving physical condition during the vacation period is also shown in the research by Cabrera *et al.*,⁽⁹⁾ they argue the need not to neglect any period of physical activity as it is a preventive, therapeutic, and health promotion tool for maintaining functionality and preventing diseases.

The survey was applied to the 25 older adults who attend community physical activity. Regarding knowledge of physical condition, 80% considered they master it, while 20% thought otherwise. Regarding knowledge about the characteristics of physical condition, 84% responded affirmatively and 16% negatively.

Everyone considered maintaining physical condition during the vacation period important. 72% stated they have obstacles and limitations for participating in that period: children have finished the school year and are at home, parents are working, they are on vacation or in another territory with family, they are caring for visiting relatives, they have some health problems, and often the area spaces are occupied by other vacation activities of the sports complex; 28% declared not having these impediments.

Guidance on activities to be carried out at home with family support and other older adults who are neighbors was accepted as a satisfactory option by 100% of respondents.

In the interview conducted about preserving the physical condition of older adults during that period, the director of the sports complex mentioned its necessity, as it guarantees health, improvement of personal relationships, development of spirituality, empathy with other peers, and socialization outside the home context.

The director evaluated the systematic activity carried out by Physical Culture professionals as excellent, as it is conducted during the academic period with great responsibility, highlighting the interest of participants and their families who attend sports events, marches, excursions, festive activities, and national commemorations.

He stated that various actions can be carried out during the vacation period: pedagogical strategies, sports and sports-cultural activities in the area, in the community, or linked to other complexes; he appreciates that independent activities with precise instructions be offered to be carried out at home.

Once the academic period of physical activities carried out in the area concluded in June, it was confirmed that all older adults finished with good physical condition based on the results of functional tests: sitting and standing up in 30 seconds, arm curls in 30 seconds; getting up, walking, and returning to sitting, chair sit-and-reach, hands behind back clasp, and six-minute walk test. However, between September 2021 and September 2025 – always in the first week after the vacation – these functional tests were measured, showing a decrease in the good physical condition the older adults had.

These results align with the study by Rodríguez Cabrera⁽¹⁰⁾ who applies functional tests to diagnose the physical conditions of older adults and design a pedagogical strategy for the physical rehabilitation of older adults convalescing from COVID-19, according to individual characteristics and differences.

Methodological triangulation allowed determining the strengths:

- Inder regulations exist that guide the care of older adults in the community physical activity area and support its importance for maintaining their quality of life.
- Willingness of older adults to receive guidance on activities to be carried out at home with family support and with peers in the area or neighbors to maintain their physical condition.

Deficiencies:

- The absence of normative guidelines from Inder related to specifications for preserving the physical condition of older adults during the vacation period and in the home context.

- Affects in the physical condition of older adults due to difficulties in systematic attendance to the area during that period.
- The impact on the community physical activity area due to the use of facility spaces for pre-scheduled community and municipal sports-cultural activities.
- No investigative references were found for the preservation of physical condition in older adults during the aforementioned period.

The need for actions to solve this problem is fostered. In this sense, Camacho *et al.*⁽¹¹⁾ highlight the benefits of physical activity at home through safe, simple, and easy-to-perform activities; while Martínez⁽¹²⁾ promotes home sports practice, scheduled training with musical support, guided dances, sports games, board games with a physical component, and theoretical activities linked to physical exercises.

The authors assume the pedagogical alternative as an option or pathway for maintaining the physical condition of older adults through in-person and blended guiding activities in the home context during the vacation period. This is consistent with the reflections of Sierra Salcedo *et al.*⁽⁶⁾ who discuss the general characteristics that alternatives should possess, their typology, and their conceptualization in the pedagogical context.

Pedagogical alternative for the preservation of physical condition in older adults at home

Objective: to contribute to the preservation of physical condition in older adults within the home context during the vacation period.

Foundations

It is philosophically based on the role of physical activity, the subject-subject and subject-object relationship, and pedagogically it is based on the typification of a new type of formative, interactive, and blended sports process.

The sociological reference requires considering that the socialization process of the older adult takes place in the physical activity from the community physical activity area towards the home, with family and peers. An analysis from Vygotsky's cultural-historical approach

allows considering the older adult in interaction with their family and neighbors in their context.

The research assumes the didactic principles set forth by Portal Iznaga:⁽¹³⁾ scientific nature of the pedagogical process, connection of education with life and the social environment, unity of the instructive, educational, and developmental aspects, unity of the affective and cognitive, and between activity, communication, and personality.

The pedagogical alternative is characterized as interactive, flexible, concrete, dialectical, systemic, cooperative, creative, and blended. To achieve it, the following requirements must be met: participation of older adults in guiding activities with the Physical Culture teacher, systematic communication (WhatsApp group, cell phones, or any other means), and the use of didactic material that describes and presents photographs of the exercises to be performed at home.

Stages of the pedagogical alternative:

Three stages that include in-person guiding activities, blended activities, and their subsequent evaluation. The in-person activities are carried out under the guidance of the Physical Culture teacher, the blended activities by the older adults at home, and the evaluative stage, after the vacation period has concluded, as illustrated in Figure 1.

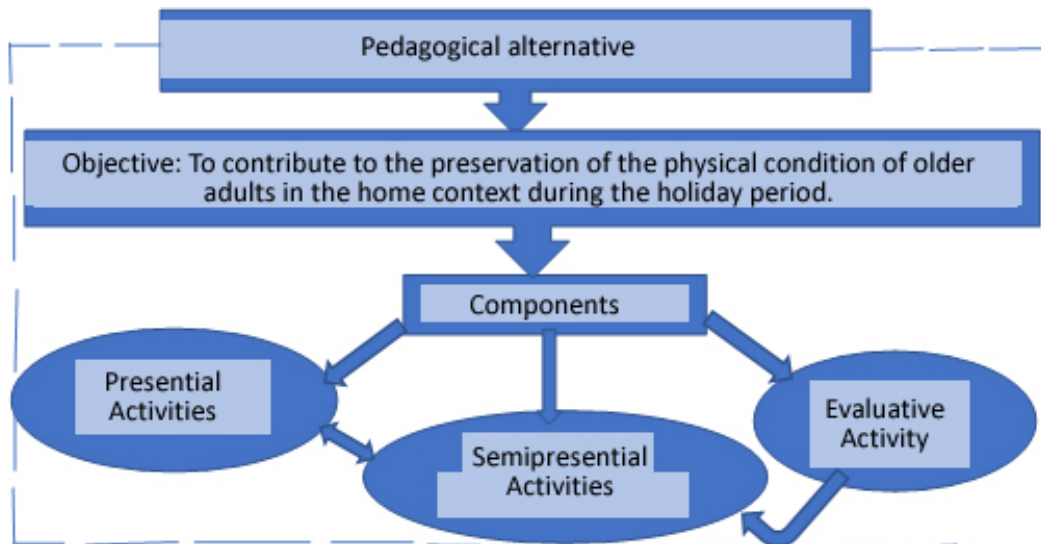


Fig. 1. Modeling of the activities of the pedagogical alternative

Source: own elaboration.

Stage I. Guiding Activity No. 1, conducted in person, scheduled for the last week of June and carried out during July. It includes specific details and general guidelines for the blended learning activities that older adults must perform at home, demonstrated by the Physical Culture teacher and compiled in a digital didactic material, described and photographed to serve as a model.

Easy-to-perform exercises are carried out, including strength, balance, flexibility, and coordination for both the upper and lower body.

Week 1: strength exercises

Week 2: balance exercises

Week 3: flexibility exercises

Week 4: coordination exercises

Stage II. Guiding Activity No. 2, conducted in person for the activities that will be carried out at home during the first week of August. It includes an exchange with older adults to resolve

any situations that may have arisen, whether with implements or means, supported by the digital didactic material, the general guidelines, and the demonstration by the Physical Culture teacher.

Week 1: execution of alternating upper and lower body exercises

Week 2: exercises aimed at improving balance

Week 3: flexibility exercises

Week 4: arm and leg coordination exercises

Stage III. In-person Guiding Activity No. 3 -during the month of September- where the Physical Culture teacher must conduct a survey with the older adults to summarize the activities carried out. It describes the evaluation method and how functional tests will be applied to verify whether the physical condition they maintained before the vacation period has been preserved.

Expert assessment:

- Statement of the objective: Very adequate (C5; 100%)
- Presentation of the stages: Very adequate (C5; 86.3%); Quite adequate (C4; 9%); and Adequate (C3; 4.5%)
- Description of in-person activities: Very adequate (C5; 95.4%) and Quite adequate (C4; 18.1%)

Similar results were obtained regarding the description of blended learning activities to be carried out at home.

The proposal for evaluating the physical condition of older adults was also assessed as Very adequate (C5; 90.9%) and Quite adequate (C4; 9%). The digital material to support home activities was considered Very adequate (C5; 100%). This assessment is shown in Figure 2.

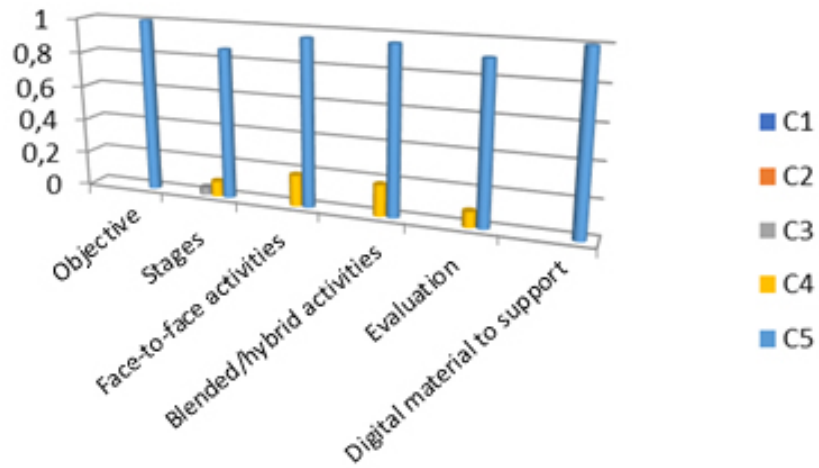


Fig. 2. Graphical representation of the assessment of the aspects of the pedagogical alternative

Source: specialists' criteria.

Regarding the general assessment of the alternative, 95.4% of the specialists considered its quality, applicability, and relevance as Very adequate (C5); and 4% as Quite adequate (C4), as illustrated in Figure 3.

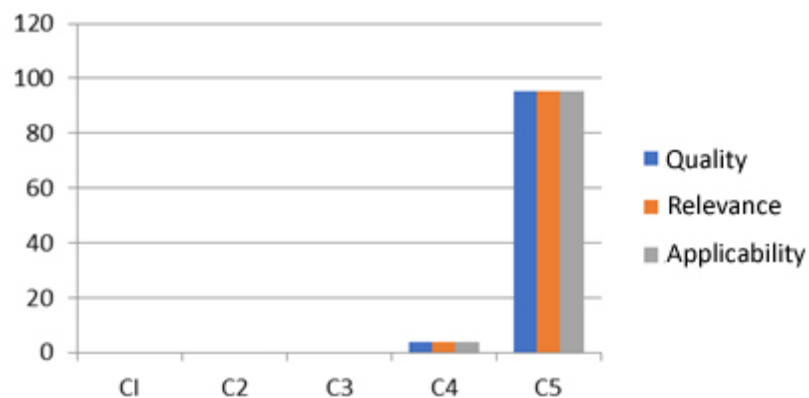


Fig. 3. Assessment of the quality, relevance and applicability of the pedagogical alternative

Source: specialists' criteria.

The specialists offered the following assessments:

- The alternative is novel, since no research proposals with this purpose have been found in Cuba.
- The digital didactic material is relevant; the activities to be carried out at home are described and graphically represented (with photographs).
- This proposal can be adapted for times of contingency and for other recess periods in the community physical activity area.

They expressed concern that perhaps not all older adults have a mobile phone, may have visual or hearing impairments, or live alone; they recommended keeping these considerations in mind when implementing the product.

Alternative implementation

It is carried out through an experiment in its pre-experimental variant, assuming the criteria of Rodríguez Cabrera,⁽¹⁴⁾ since a cut can be made in the second face-to-face activity to verify any situation and control the incidence of external factors in the application of the activities.

The application of a pre-experimental design of the type O1 X O2 was determined to corroborate the effectiveness of the activities, represented as follows: G: O1 X O2, where:

- G: represents the group of older adults
- O1: the initial measurement (pretest)
- X: the application of the activities
- O2: the subsequent measurement (posttest)

Initially, the group of older adults was given a questionnaire that included the indicators of the dimensions, and the first functional tests prior to the application were carried out to establish the level of excellence reached in their physical condition during the academic year, before applying the alternative.

Once the alternative was applied, for the pretest-posttest comparison, another questionnaire and the second functional tests were conducted to corroborate the preservation of the

physical condition achieved during the academic period throughout the vacation period. The comparison of the functional tests is shown in Figure 4.

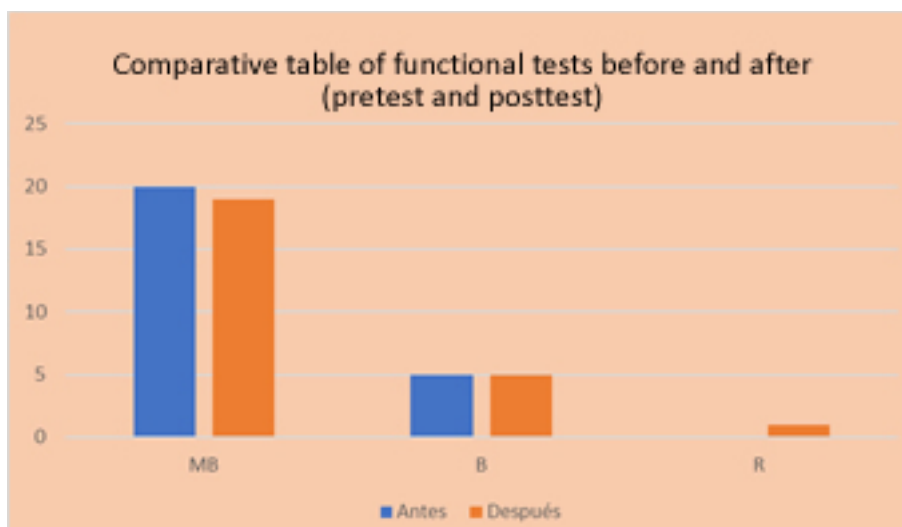


Fig. 4. Graphical representation of the comparison of the functional tests
Source: pretest and posttest

Scientific contribution

A pedagogical alternative is contributed for the preservation of physical condition in older adults at home, as an option or means for its preservation through face-to-face and blended guiding activities during the vacation period.

CONCLUSIONS

The pedagogical alternative designed as an option or means for preserving the physical condition of older adults in the home context during the vacation period demonstrated its effectiveness based on the pretest-posttest comparison; it offers a new approach and vision by promoting family cohesion, independence, and safety through strength, balance, coordination, and flexibility exercises. Its quality, relevance, and applicability were assessed by the consulted specialists and by the results of the pre-experiment.

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Declaration of interests

The authors declare no conflict of interest.

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