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Original article

Preparing Physical Recreation teachers for inclusion from the community environment

[*La preparación de los profesores de Recreación Física para la inclusión desde el entorno comunitario*]

[*A preparação dos professores de Recreação Física para a inclusão a partir do ambiente comunitário*]

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ABSTRACT

Introduction: Recreational activities in community settings are ideal spaces for promoting social inclusion, with special attention to people with physical-motor disabilities, which requires the Physical Recreation teacher to perfect their daily actions through constant improvement.

Objective: To develop a methodological strategy for Physical Recreation teachers to promote the inclusion of people with physical-motor disabilities in community-based

recreational physical activities in the Marianao municipality, Havana province. **Materials and methods:** The study employed theoretical, empirical, and statistical methods, including analytical-synthetic, inductive-deductive, and hypothetical-deductive reasoning, as well as document analysis, surveys, interviews, expert opinion, ATJ matrices, and pedagogical experiments. Statistical-mathematical methods included the calculation of absolute and relative frequencies and non-parametric tests. Wilcoxon. **Results:** The proposed methodological strategy emphasizes the comprehensive and harmonious development of personality in accordance with the needs of society. It was characterized by a set of sequential and interconnected actions that guided the transition from an initial state to a desired state. The statistical tests employed corroborated this. **Conclusions:** The development and implementation of the methodological strategy, as well as the application of the ATJ matrices based on the criteria of a group of experts and the results of the experiment carried out, reaffirmed that this strategy corresponds to the current demands of Cuban Higher Education and satisfies the preparation needs for achieving inclusion in community recreational activities.

Keywords: social inclusion, preparation, physical recreation.

RESUMEN

Introducción: las actividades recreativas en los entornos comunitarios son espacios idóneos para el impulso de la inclusión social, con especial atención en las personas con discapacidad físico-motora, lo que exige al profesor de Recreación Física perfeccionar su accionar diario mediante su constante superación.
Objetivo: elaborar una estrategia metodológica dirigida a los profesores de Recreación Física para que propicien la inclusión de personas con discapacidad físico-motora a las actividades físicas recreativas comunitarias del municipio Marianao, en la provincia La Habana.
Materiales y métodos: para el desarrollo del estudio se aplicaron métodos teóricos empíricos y estadísticos entre los que están el analítico-sintético, inductivo-deductivo, hipotético-deductivo, análisis documental, encuesta, entrevista, criterio de expertos, las

matrices ATJ, el experimento pedagógico. Del estadístico- matemático, el cálculo de las frecuencias absolutas y relativas, y la prueba no paramétrica de Wilcoxon.

Resultados: la estrategia metodológica propuesta pondera la formación multilateral y armónica de la personalidad acorde a las necesidades de la sociedad. Se caracterizó por un conjunto de acciones secuenciales e interconectadas que permitieron dirigir el paso desde un estado inicial a un estado deseado. Las pruebas estadísticas empleadas así lo corroboraron.

Conclusiones: la elaboración e implementación de la estrategia metodológica, así como la aplicación de las matrices ATJ a partir del criterio de un grupo de expertos y los resultados del experimento realizado, reafirmaron que dicha estrategia se corresponde con las exigencias actuales de la Educación Superior cubana y satisfacen las necesidades de preparación para el logro de la inclusión en las actividades recreativas comunitarias.

Palabras clave: inclusión social, preparación, Recreación Física.

RESUMO

Introdução: As atividades recreativas em ambientes comunitários constituem espaços ideais para promover a inclusão social, com atenção especial às pessoas com deficiência físico-motora, o que exige que o professor de Recreação Física aprimore sua atuação diária por meio de constante aperfeiçoamento.

Objetivo: Elaborar uma estratégia metodológica voltada para professores de Recreação Física, visando promover a inclusão de pessoas com deficiência físico-motora em atividades físicas recreativas comunitárias no município de Marianao, província de Havana.

Materiais e métodos: Para o desenvolvimento do estudo, foram empregados métodos teóricos, empíricos e estatísticos, incluindo: analítico-sintético, indutivo-dedutivo, hipotético-dedutivo, análise documental, inquérito, entrevista, critério de especialistas, matrizes ATJ e experimento pedagógico. No âmbito estatístico-matemático, utilizou-se o cálculo de frequências absolutas e relativas, bem como o teste não paramétrico de Wilcoxon.

Resultados: A estratégia metodológica proposta privilegia a formação multilateral e harmoniosa da personalidade, em consonância com as necessidades da sociedade. Caracteriza-se por um conjunto de ações sequenciais e interconectadas que permitiram a transição de um estado inicial para um estado desejado. Os testes estatísticos aplicados confirmaram esse resultado.

Conclusões: A elaboração e a implementação da estratégia metodológica — bem como a aplicação das matrizes ATJ, baseadas no critério de um grupo de especialistas, e os resultados do experimento realizado — confirmaram que a referida estratégia atende às exigências atuais do Ensino Superior cubano e supre as necessidades de capacitação para viabilizar a inclusão em atividades recreativas comunitárias.

Palavras-chave: inclusão social, capacitação, Recreação Física.

INTRODUCTION

When we talk about inclusion, we refer to tolerance, respect, and solidarity, but above all, to the acceptance of people, regardless of their circumstances. All of this without making distinctions, without overprotecting or rejecting others because of their characteristics, needs, interests, potential, and much less because of their limitations (Bagué *et al.*, 2021).

The inclusion of diversity should be seen as beneficial for all members of a community. Inclusive local development is recognized as a path to equitable social transformation. This approach focuses on the community and territory to develop programs that promote the capabilities of all people. In this way, equal opportunities are supported through the sustainable use of natural resources and with the greatest possible participation of social actors in decision-making (Alvarado & Meresman, 2021).

From this perspective, disability is understood as a human condition that, in general, encompasses a person's impairments, activity limitations, and participation restrictions. It is a complex phenomenon that does not consider the individual in isolation, but rather

in their interaction with the society in which they live. This experience is unique for each individual (Alvarado & Meresman, 2021).

Among the different classifications of disability, physical-motor disability is understood as one of those that most hinders the development of recreational physical activities of individuals and their socialization in community activities, since it prevents the natural movement of the body, limits the function of displacement of people, as well as their personal and social development (Arranz, 2023; Duran *et al.*, 2018).

In accordance with the above, the challenge lies in considering recreational physical activities as an effective tool for the inclusion of people with physical disabilities, taking advantage of the benefits they offer. These elements support the idea that recreation arises as an indispensable need through which humankind, since its origins, nourishes its functions and develops its personality through recreational physical activity, thus having a marked biological character and objective social functions (Sánchez, 2022).

Recreation in the community is a social phenomenon that dictates practices for professionals involved in this human activity (Copola & Bauso, 2023) . The physical recreation instructor plays a leading role, taking into account the context in which they work, and therefore must refine their daily practice through ongoing professional development. Salazar *et al.* (2024) understand the training of these professionals as geared towards the inclusion of people with physical and motor disabilities through courses and workshops. They maintain that conducting recreational physical activities, particularly for people with physical and motor disabilities, requires a high level of teacher training, tailored to the current demands of recreation in the community.

Based on this criterion and the reasoning of various authors (Copola & Bauso, 2023; Jiménez *et al.*, 2020; Salazar *et al.*, 2024; Salazar 2025; Sánchez, 2022), the preparation of Physical Recreation teachers to face the described scenario is conceived as the set of improvement actions that enable the transition from learning to know, to do, to live together and to be as systemic and systematic acts from an academic and ethical

responsibility to achieve the expected teaching-research development in the context of recreational physical activities with people with physical-motor disabilities.

With this vision aligned with the contemporary scenario in Cuba, it is interesting to define as the objective for the study the development of a methodological strategy aimed at Physical Recreation teachers to promote the inclusion of people with physical-motor disabilities in community recreational physical activities in the municipality of Marianao, in the province of Havana.

MATERIALS AND METHODS

The study was characterized by its use of participatory action research methodology, aiming to generate useful and transformative knowledge through direct collaboration between researchers and members of the Marianao community in Havana province. It is also considered descriptive in scope, as it analyzes and presents the findings that characterize the process and define the results. This was all supported by a pre-experimental study that integrated the research process through the researcher's participatory work on the characteristics of the context, the participants, and the planned activities, with the goal of documenting and describing the events resulting from the intervention. The study presented here is the result of a lengthy research process spanning the period from 2018 to 2026. This document revisits previously published findings while also complementing and presenting new results not previously identified, as well as theoretical and practical assessments of the proposal and its effectiveness.

Its development took place primarily in the sports complexes of the Marianao municipality in Havana. Initially, the 17 physical recreation teachers who carried out recreational physical activities in the locality in question were chosen as the population. During the selection process, two teachers dropped out, so the remaining 15 (100% of the population), who represented the six sports complexes, were included.

For sample selection, non-probability purposive sampling was used, as the goal was not "…representativeness of elements of a population but rather the requirement of a careful and controlled selection of subjects with certain characteristics that would allow obtaining the maximum amount of information from the multiple realities that could be discovered" (Mesa, 2006, p. 15). The inclusion criterion was being a Physical Recreation teacher in the Marianao municipality, which aligned the population with the study sample. The municipal Recreation methodologist and the six assistant directors of Community Physical Activity were identified as key informants.

For the parameterization of the dimensions and indicators, the ordinal rating scale proposed by Gómez (2023) and adapted to the study context was used. This scale comprises three levels: adequate (A), somewhat adequate (PA), and inadequate (NA). The first level (A) represents the desired results; the second level (PA), results that fall short of the desired results; and the third level (NA), undesired results. The analysis of the dimensions and indicators, as well as the variable, based on these levels, allowed for the structuring of the research.

For the development of the study, the regulatory documents governing the methodological portfolio of the Physical Recreation teachers involved were initially reviewed. The data from the reviewed documents was recorded using the form validated by Gómez (2023). The documents analyzed were the control logbook and the monthly work agreement, which is part of the teacher's preparation and planning. Following this approach, an observation guide, validated by Rodríguez (2019) and adapted for this study, was then applied to community-based recreational physical activities. The objective was to verify the actions that the teachers implemented to promote the inclusion of people with physical and motor disabilities.

As a confirmatory instrument for the findings obtained in the two previous phases, a survey was administered to Physical Recreation teachers, validated by Sánchez (2022), with the aim of verifying their preparedness regarding the inclusion of people with physical-motor disabilities in community-based recreational physical activities. To complement the results, a structured interview, adapted from Rodríguez (2019), was

used with key informants to understand their criteria related to the teachers' level of preparedness.

The narrated information justified the use of theoretical, empirical, and statistical-mathematical methods; among the most representative of these are:

Analytical-synthetic: to understand the particularities of the preparation process of Physical Recreation teachers for the inclusion of people with physical-motor disabilities in community recreational physical activities and each of the phases that make up the strategy, which facilitated ordering the contents from the general to the specific.

The inductive-deductive approach: facilitated the analysis from the most general elements that make up a methodological strategy for satisfying the inclusion needs of people with physical-motor disabilities in community recreational physical activities.

Systemic-structural-functional: facilitated the establishment of systemic links between theoretical references, empirical inquiries and the components of the methodological strategy, based on the structure and organization assumed on the basis of the contents of Recreation, related and adapted to community recreational physical activities, taking into account the inclusion of people with physical-motor disabilities, which provided a logical and hierarchical order to the actions designed in each stage.

Hypothetical-deductive: facilitated shaping the approximate idea of the possible solution for the preparation of Physical Recreation teachers in the Marianao municipality, with the aim of promoting the inclusion of people with physical-motor disabilities in community recreational physical activities.

Among those at the empirical level, the following were used:

Documentary analysis: it was used with the objective of evaluating the methodological process used for the inclusion of people with physical-motor disabilities in recreational physical activities, it allowed the consultation of the control book and the monthly work agreement.

Survey: It was applied to 15 Physical Recreation teachers with the objective of obtaining information on aspects related to their preparation to attend to the inclusion of people with physical-motor disabilities in community recreational physical activities.

Interviews were conducted with the municipal methodologist and the six assistant directors of the sports complexes. These individuals were considered key informants, as they are part of the management structure that oversees the planning of educational and didactic activities within their jurisdiction. The interviews aimed to understand the criteria related to the preparedness of physical recreation instructors, their planning and development methods, and the quality of inclusive community-based recreational physical activities.

Methodological triangulation: It allowed cross-control, based on the results obtained, in the application of the methods: documentary analysis, survey, interview and observation.

Expert opinion: Based on the selection of experts, it provided the theoretical evaluation of the proposal, being able to make comparisons, issue judgments and assessments for the improvement of the proposed strategy.

The ATJ matrices: allowed predicting the validity of the methodological strategy before its implementation, through a team of 19 experts, selected based on the criteria of Burguet *et al.* (2019).

Pedagogical experiment: The pre-experimental variant was used to evaluate the functionality of the methodological strategy, as it tests a causal hypothesis of the empirical intervention study in the population of Recreation teachers in the municipality of Marianao. Teachers were not randomly assigned; instead, all those working in the municipality's sports complexes were included.

From the statistical-mathematical method: descriptive statistics **were** used to calculate absolute and relative frequencies in order to determine the representativeness of the group data obtained by dimensions and indicators. A non-parametric test was also used.

Wilcoxon to check the significance of the changes between the pretest and posttest after the strategy was applied.

RESULTS AND DISCUSSION

In accordance with the aspects analyzed and for the presentation of the results, it was considered appropriate to identify the preparedness of Physical Recreation teachers for the inclusion of people with physical-motor disabilities in community-based recreational physical activities as the variable under study. This was defined based on the theoretical framework provided by the authors IM Ruiz (2001), Santos (2005), A. Pérez (2010), Garbey (2017), Bombino and Jiménez (2019), Reimers and Chung (2019), and Sánchez (2022). It was operationalized into two dimensions and four indicators; for this purpose, the classification given by Sánchez (2022) and Gómez (2023) was adopted, as presented in Table 1.

Table 1. *- Dimensions and indicators of the variable under study*

Dimensions	**Indicators**
Preparing Physical Recreation teachers for the inclusion of people with physical-motor disabilities in community recreational physical activities	1.1. Theoretical and practical knowledge about the inclusion of people with physical-motor disabilities
	1.2. Mastery of the characteristics of people with physical-motor disabilities.
Planning community recreational physical activities based on the inclusion of people with physical-motor disabilities	2.1. Level of knowledge about the planning of recreational physical activities for the inclusion of people with physical-motor disabilities
	2.2 . Methodological approach to planned recreational physical activities that promotes the inclusion of people with physical-motor disabilities

For the parameterization of the dimensions and indicators, the ordinal rating scale proposed by Gómez (2023) and adapted to the study context was used. This scale comprises three levels: adequate (A), somewhat adequate (PA), and inadequate (NA).

The first level (A) represents the desired results; the second level (PA), results that fall short of the desired results; and the third level (NA), undesired results. The analysis of the dimensions and indicators, as well as the variable, based on these levels, allowed for the structuring of the study.

Results of the diagnostic instruments applied

In general, 15 documents prepared as a result of technical-methodological controls or visits to the activities of the 15 teachers comprising the sample were reviewed. It should be noted initially that, from the perspective of the administrators responsible for writing the reports, little reference is made to the inclusion of people with physical-motor disabilities, which is considered a starting point for the problem. Based on the most common observations in these reports and in accordance with the research objectives, a set of aspects was adopted to guide the review uniformly and ensure consistency with the established evaluation scale. These aspects revealed a lack of knowledge or a lack of willingness to achieve the inclusion of people with physical-motor disabilities in community activities. Among the aspects identified as deficiencies is the planning of the activity's objective, where 13 (87%) of the 15 (100%) teachers whose documents were reviewed inadequately planned the inclusion of this age group. lower amount, which leaves only the remaining two (13%) with an adequate evaluation in the development of this pedagogical activity.

In accordance with these results, 14 (93%) teachers were identified during the visits as having inadequate or poor performance in preparing scenarios that would promote the inclusion of people with this disability. Furthermore, the same number of teachers did not follow up on the inclusion of people with physical-motor disabilities during ongoing activities. Based on these results, a review was conducted of the main topics covered in the methodological training, which is delivered centrally at the municipal level. This review concluded that:

- Generally, the debates focus on the main manifestations, organization, and design of the event, not on the variety of participants.

- Issues related to the inclusion of people with disabilities are addressed very infrequently and with little depth.
- The inclusion of people with physical-motor disabilities in community recreational physical activities was an issue that was not addressed during the sampled period.

As a complement to the document review, structured observation was carried out on six community recreational physical activities in which the 15 Physical Recreation teachers who are part of the sample participated.

The main results were recorded in an observation log. In general, it can be summarized by the observed aspects that the sample shows shortcomings in promoting inclusion in community-based recreational physical activities. Although the participation of people with physical-motor disabilities is low, those few who do attend do not receive systematic and personalized support in terms of their specific needs. According to the analysis, only one (6.7%) promotes inclusion, 10 (66.6%) do so to a limited extent, and four (26.7%) do not.

This aspect is preceded by the fact that the observed teachers showed little preparation for including this population segment in activities. In this case, eight (53%) and seven (46.7%) teachers, respectively, showed inadequate or insufficient levels of theoretical and practical knowledge to address situations that arise in activities related to this age group. The observed teachers also demonstrated limited knowledge about planning recreational physical activities, which affects the positive actions they provide to promote inclusion.

In contrast to the values obtained, the results of the survey administered to the same study sample revealed that only one (6.7%) of the teachers consider their preparation adequate for the inclusion of people with physical disabilities in community-based recreational physical activities. Conversely, eight (53.4%) believe it is somewhat inadequate, and six (40%) respond that it is not adequate, demonstrating that the teachers have limited knowledge on the subject. When asked about their knowledge of

the fundamental characteristics of people with physical disabilities, only one (6.7%) reported having adequate knowledge, five (33.3%) declared having little knowledge, and nine (60%) did not acknowledge having the necessary knowledge.

The largest number of teachers (14 (93.3%)) believe that the topics in the methodological preparations are insufficient in terms of achieving the inclusion of people with physical-motor disabilities, they rate them as inadequate or not adequate.

The analysis of the results considered the relationship between the instruments used, the objectives, characteristics, and indicators being evaluated, as well as the relationship between the indicators of each dimension and the items of each instrument. This approach facilitated the evaluation of the indicators, dimensions, and the variable according to the established parameters based on the adopted rating scale. This allowed for the identification of the actual conditions of the Physical Recreation teachers' preparation for the inclusion of people with physical-motor disabilities in community-based recreational physical activities. Table 2 shows the results obtained from all the instruments used, which allowed for the evaluation of the state of the variable under study (Table 2).

Table 2. *Evaluation of the indicators, dimensions and variables according to the instruments applied*

Dimension 1: Preparation of recreation teachers for the inclusion of people with physical-motor disabilities in community recreational physical activities.					
Indicators	**Interview**	**Documentary analysis**	**Observation**	**Survey**	**Assessment**
1.1	PA (level 2)	NA (level 3)	NA (level 3)	NA (level 3)	NA (level 3)
1.2	NA (level 3)	NA (level 3)	PA (level 2)	NA (level 3)	NA (level 3)
Dimension assessment					NA (level 3)
Dimension 2: planning of community recreational physical activities based on the inclusion of people with physical-motor disabilities.					
2.1	NA (level 3)	PA (level 2)	NA (level 3)	NA (level 3)	NA (level 3)
2.2	PA (level 2)	NA (level 3)	NA (level 3)	NA (level 3)	NA (level 3)
Dimension assessment					NA (level 3)

Evaluation of the variable	NA (level 3)

The results allowed us to conclude that Dimension 1 (Preparation of Physical Recreation teachers for the inclusion of people with physical-motor disabilities in community-based recreational physical activities) and Dimension 2 (Planning of community-based recreational physical activities based on the inclusion of people with physical-motor disabilities) presented inadequate results (NA), placing them at level three with undesirable outcomes. 80% of the frequencies calculated by the indicators, in relation to the instruments, reflect these values. All of this justifies the evaluation of the variable: the preparation of Physical Recreation teachers for the inclusion of people with physical-motor disabilities, with inadequate results, placing it at level three. also, at level three. These values highlight the preparation of the Physical Recreation teachers and the actions taken by the municipality to achieve the inclusion of people with physical-motor disabilities in community recreational physical activities.

To address this problem, a methodological strategy was developed to contribute to improving the professional training process, enabling both initial and ongoing preparation (Martínez et al., 2020). To gain a comprehensive understanding of the strategy, the characteristics that define this type of scientific outcome were studied. Its design and organization were based on the structural components proposed by De Armas et al. (2005) and philosophical, psychopedagogical, sociological, and recreational foundations, all contextualized to the research. The strategy is graphically represented in Figure 1.

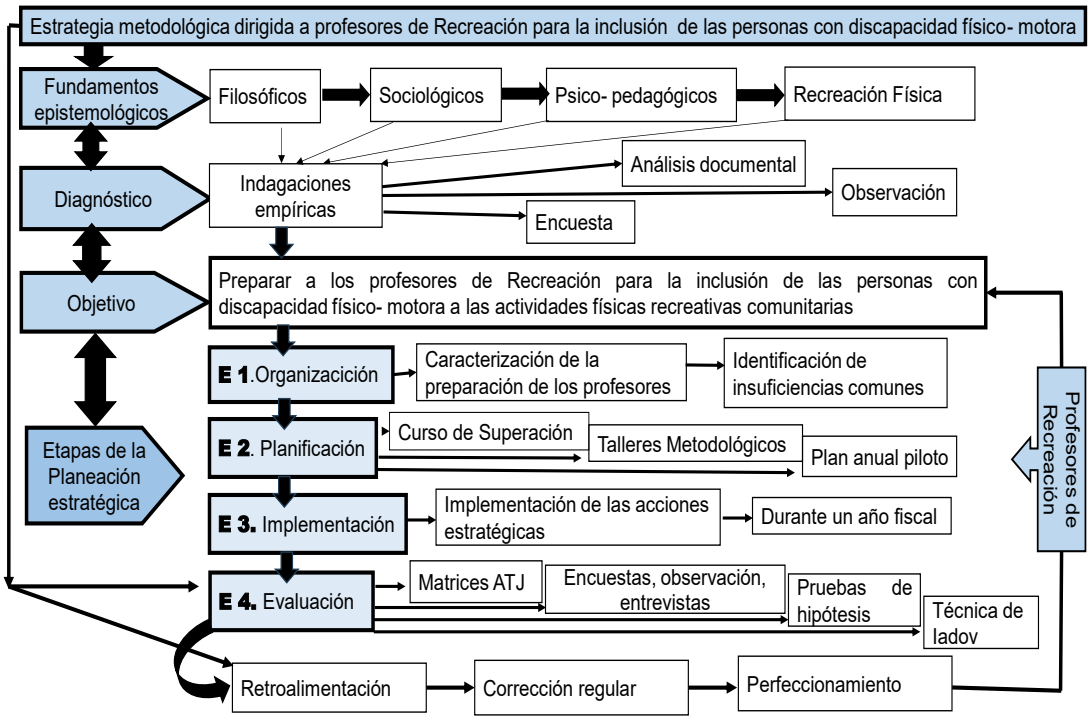


Fig. 1. *- Structure of the methodological strategy aimed at Physical Recreation teachers*

In accordance with the above, the stages are organized according to the criteria of Linares *et al.* (2022) adjusted to the characteristics of the research, based on the following specifications: objective(s), action(s), responsible party(ies), temporality, participants.

In summary, the stages are presented below:

Stage I. Organization

Action 1. Characterization of the current state of the process of preparing Physical Recreation teachers for the inclusion of people with physical-motor disabilities in the community's recreational physical activities, based on the results of the diagnosis.

Action 2. Identification of the common elements that constitute deficiencies to be addressed in the preparation of Physical Recreation teachers in the Marianao municipality.

Responsible: researcher.

Temporality: short term (ten days) from February 2 to 11, 2022.

Participants: Deputy Directors of Community Physical Activity (CPA) of the Sports Complexes of the municipality and the Physical Recreation Methodologist of the Marianao municipality.

Stage II. Planning

Action 1. Design of a professional development course that contributes to the theoretical and methodological updating of Physical Recreation teachers in the Marianao municipality, for the inclusion of people with physical-motor disabilities in community recreational physical activities.

Course name: Essential elements for inclusive physical recreation for people with physical-motor disabilities.

Topic 1. Conceptual bases of Inclusive Physical Recreation and community recreational physical activities, from the perspective of people with physical-motor disabilities.

Topic 2. Recreational physical activity in people with physical-motor disabilities.

Action 2. Organization of six methodological workshops that contribute to the planning of community recreational physical activities for the inclusion of people with physical-motor disabilities.

The workshops will be held monthly for six consecutive months, lasting approximately two hours each. Their topics are listed below:

- Workshop 1. Inclusion from an integrative perspective.
- Workshop 2. Inclusion from the perspective of the Physical Recreation teacher.
- Workshop 3. Working with the didactic components of community recreational physical activities.

- Workshop 4. Determining inclusive requirements.
- Workshop 5. Design of methodological actions for inclusion using the resources of recreational physical activities.
- Workshop 6. Reflections on pedagogical practice, on inclusion from the perspective of the Physical Recreation teacher.

They were all planned with the intention of developing debates based on collective learning about practical experiences and acquired knowledge.

Action 3. Development of an annual pilot plan for planning community-based recreational physical activities focused on the inclusion of people with physical disabilities in the Marianao municipality. This plan includes a series of illustrations showcasing the various inclusive recreational activities proposed.

The fundamental purpose is to provide Physical Recreation teachers with material that can be used as a guide for the development of good practices during the planning of community recreational physical activities for the inclusion of people with physical-motor disabilities in the Marianao municipality.

Responsible: researcher.

Time frame: long term (throughout the year 2022).

Participants: author of the research, deputy directors of the Sports Complexes, methodologist and Physical Recreation teachers of the Marianao municipality.

Stage III. Implementation

Action 1. Delivery of the professional development course "Essential elements for inclusive physical recreation for people with physical-motor disabilities."

Its development was conceived over a period of two months in general, specifying the face-to-face meetings to once a week.

Responsible: researcher.

Duration: three months (from January to March 2023).

Participants: Physical Recreation teachers.

Action 2. Development of the six planned methodological workshops to contribute to the planning of community recreational physical activities for the inclusion of people with physical-motor disabilities.

During its development, the course addresses any remaining questions and provides a better methodology for planning community-based recreational physical activities, from the initial assessment to the activity plan. It promotes positive attitudes toward mindful and flexible physical recreation that is tailored to the participants.

Materials are used that influence the perception of needs and potential specific to people with physical-motor disabilities. These materials are implemented once a week, in the period following the course.

Responsible: researcher.

Duration: three months (from April to June 2023).

Participants: Physical Recreation teachers.

Action 3. Socialization of the annual pilot plan for the planning of community recreational physical activities for people with physical-motor disabilities.

This approach is implemented through support in planning community-based recreational physical activities for people with physical disabilities. It relies on collaboration with teachers to design activities that align with the content outlined in the methodological guide and weekly activity plan.

These activities are contextualized according to the specific characteristics of each community where they take place. Consideration is also given to people with disabilities and the local infrastructure. These guidelines establish recommendations for the design of community-based recreational physical activities and their didactic components: objectives, content, methods, and resources for carrying out the activities. The starting point is the content outlined in the objectives of Key Result Area No. 1, guidelines 161 and 162, and Resolutions 54 and 56 of the National Institute of Sports, Physical Education and Recreation (INDER).

The methodological framework outlines the steps for adapting the planning of community-based recreational physical activities. This framework approves adjustments to methodologies, particularly regarding methods, resources, and groupings, as well as the environment, enabling their application and the evaluation of their effectiveness in facilitating the participation of people with physical disabilities in community-based recreational physical activities.

The activities are organized by methodological teams during the professional development days planned by the Municipal Sports Department. They are established through both collective and independent work, and at each meeting, areas for improvement are assessed as part of the strategy's evaluation component. In all meetings, special attention is given to the environmental dimension. Recommendations are provided to facilitate the development of activities in harmony with the surrounding environment, thus promoting their sustainable development.

Recommendations are thus established for the planning of recreational physical activities, specifying the necessary aspects to take into account, from an organizational and methodological perspective, especially for the care of people with physical-motor disabilities.

Responsible: researcher.

Duration: six months (from April to December 2023).

Participants: Physical Recreation teachers.

Stage IV. Evaluation

Action 1. General evaluation of the strategy.

In this stage, a general evaluation of the strategy was developed, based on the achievement of its objective and its strategic actions. It is important to highlight, in this type of scientific outcome, the importance of systematic monitoring and control of the performance of its stages with the corresponding actions. This allows for immediate readjustment of the process during its development, if necessary. Table 3 presents the evaluation method adopted by Morales *et al.* (2021), adjusted by Castañeda (2024), and adapted to the context of this research.

Table 3. - *Distinctive elements for strategy evaluation*

No	What is being evaluated?	Who does the evaluation? (participants)	When is it evaluated?	What is the purpose of the evaluation?	What is used for evaluation? (methods and techniques)
1	The viability, consistency, legitimacy, and reliability of the methodological strategy.	Selected experts	Before applying the strategy	Determine the overall forecast average	ATJ matrix to predict its validity
2	The professional pedagogical skills achieved by Physical Recreation teachers aimed at the inclusion of people with physical-motor disabilities in community recreational physical activities	Beneficiary users (Physical Recreation teachers of the Marianao municipality)	After the strategy was applied	Investigate the effectiveness of the strategy after its implementation	Observation of recreational activities, surveys of teachers, and interviews with key informants (Evidence of knowledge about the inclusion of people with physical-motor disabilities in recreational physical activities)
3	The significance of the changes between the pre-test and the post-test.	The researcher	After the strategy was applied	Verify the functionality of the strategy	Hypothesis testing (compare the results obtained between the pre-test and

					the post-test, after the strategy was implemented)
4	User satisfaction	The researcher	After the strategy was applied.	Determining teacher satisfaction	Iadov Technique

The proposed methodological strategy emphasizes the comprehensive and harmonious development of personality in accordance with the needs of society, as an inclusive process at all stages of life and in all possible situations. This makes the Recreation program, through its content, an integrative discipline that synthesizes data from other disciplines in its object of study without losing its specificity. Therefore, it was characterized by a set of sequential and interconnected actions that guided the transition from an initial state to a desired state resulting from the planning process.

To predict its validity before implementation, the ATJ matrices were used (Morales *et al.*, 2021; Castañeda *et al.*, 2025). Fifteen of the twenty previously selected experts participated in the procedure. Based on the application of the instrument, they concluded that, with an overall average prediction score of 9.3, the methodological strategy was viable (9.2), consistent (9.2), reliable (9.3), and legitimate (9.5), thus predicting its validity and potential for effectiveness before implementation.

For its application, a longitudinal pre-experiment was developed where the null hypothesis (Ho) was: ($Me_D = 0$) the median of the differences between the two measurement points is equal to zero, which represents that there are no changes between the pre-test and the post-test regarding the actions of Physical Recreation teachers to promote the inclusion of people with physical-motor disabilities, after the strategy was applied. The alternative hypothesis (Hi) was: ($Me_D \neq 0$) the median of the differences between the two measurement points is different from zero, which represents that there are changes between the pre-test and the post-test after the methodological strategy was applied to Physical Recreation teachers to promote the inclusion of people with physical-motor disabilities in community recreational physical activities.

The methodological strategy was considered the independent experimental variable; the preparation of Physical Recreation teachers for the inclusion of people with physical-motor disabilities in community recreational physical activities was considered the dependent experimental variable. As part of the study, a set of extraneous variables were controlled to improve the practical efficiency of the strategy (the coordinated work between the researcher and the Marianao Municipal Sports Directorate; the motivations for participating in the study; the availability of materials for carrying out recreational physical activities adapted to people with physical-motor limitations) .

Main results by applied instruments

The results obtained from applying the same diagnostic instruments allowed for the identification of significant changes in teachers' behavior regarding the inclusion of people with physical disabilities. A general analysis of the results from the two activities observed suggests that the sample demonstrates knowledge and skills in promoting inclusion in community-based recreational physical activities. Personalized and adapted treatment of the participants in this age group is evident, taking into account their specific needs. According to the analysis, 12 (80%) of them promote inclusion adequately; the rest do not yet meet expectations, suggesting the need for ongoing, systematic support to further their training. Similarly, 13 (86.7%) showed an adequate level, while two (13.3%) showed a less than adequate level, corresponding to the implementation of the theoretical and practical knowledge acquired to address situations that arise during activities involving this population segment.

Significant progress was evident in the implementation of the ECLAC principles of inclusion. Of those observed, 10 (66.6%) demonstrated commitment to these principles, while five (33.3%) required follow-up on this topic due to inadequate practices. The majority of the teachers in the sample (13 (86.7%)) successfully redirected the activities when observing or evaluating undesirable situations, demonstrating their theoretical and practical preparation and applying productive methods. Only two (13.3%) showed difficulties related to this topic, which could be due to multiple factors, including the individual's morpho-functional characteristics in contrast to their current knowledge.

After observing the recreational physical activities, the survey used for the initial characterization was applied to the teachers considered as a study sample; its objective was the same: to collect the teachers' opinions on their preparedness for the inclusion of people with physical-motor disabilities in community recreational physical activities.

Of those surveyed, 11 (73.3%) consider their preparation adequate for achieving the inclusion of people with physical disabilities in community-based recreational physical activities. Conversely, three (20%) believe it is somewhat inadequate despite the training received, and only one (6.7%) responds that it is not adequate at all. These figures demonstrate that a large number of teachers have a grasp of the subject, although further work is needed with those who have not yet achieved improvement. When asked about their knowledge of the fundamental characteristics of people with physical disabilities, 13 (86.6%) report having adequate knowledge to address the process; one (6.7%) reports having limited knowledge, and an equal number do not acknowledge having the necessary knowledge. Although not all respondents achieved satisfactory results, positive changes are evident compared to the initial situation.

In accordance with the support provided to municipal directors throughout the study, 10 (66.7%) teachers believe that the topics covered in the most recent methodological preparations are suitable for achieving the inclusion of people with physical-motor disabilities, while only five (33.3%) rate them as somewhat inadequate. It should be noted that none expressed dissatisfaction with the planned community-based recreational physical activities aimed at the inclusion of people with physical-motor disabilities in the community; 13 (86.6%) consider them adequate.

Of the 15 teachers, 14 (93.3%) stated that they agree that people with physical-motor disabilities should be part of community recreational physical activities; only one (6.7%) stated that it is not very appropriate.

Observing the behavior of the items in the questionnaire, the teachers' responses showed an increase in preparation, an improvement in planning, and a mastery of the fundamental characteristics of people with physical-motor disabilities.

After the strategy was applied, in-depth interviews were again conducted with key informants (Physical Recreation methodologist and six deputy directors of sports complexes in the Marianao municipality) with the aim of understanding the criteria related to the state of preparation of Physical Recreation teachers, the planning, development and quality of inclusive community recreational physical activities.

The interviewees believe that Physical Recreation teachers significantly improved their preparation and interest in organizing inclusive recreational physical activities. Almost all (six, or 85.7%) indicated that these teachers improved their knowledge on the subject. Regarding the organization and development of these activities with respect to achieving the inclusion of people with physical disabilities, only one (14.3%) expressed negative opinions, suggesting that the majority recognized additional gains in inclusion during the implementation of the strategy. In contrast to these results, the informants (five, or 71.4%) also acknowledged the increase in the number of participants with physical disabilities in community activities, indicating improvements in preparation, motivation, planning, socialization, and presentation of community activities with an emphasis on social inclusion.

The opinions of those interviewed regarding the leadership of Physical Recreation teachers during inclusive recreational physical activities changed; five (71.4%) expressed a favorable opinion. Six (85.7%) had positive considerations regarding the systematic approach to the inclusion of people with physical-motor disabilities in community recreational physical activities within the area of training effectiveness.

Positive values were reflected in the preparation, organization, and development of inclusive recreational physical activities. Table 4 shows the results obtained by dimensions and indicators, which allowed for the evaluation of the final state of the variable under study (Table 4).

Table 4. *- Evaluation of the indicators, dimensions and variable after the strategy was applied*

Dimension 1: Preparation of recreation teachers for the inclusion of people with physical-motor disabilities in community recreational physical activities.					
Indicators	**Interview**	**Documentary analysis**	**Observation**	**Survey**	**Assessment**
1.1	A (level 1)	A (level 1)	A (level 1)	A (level 1)	A (level 1)
1.2	A (level 1)	A (level 1)	A (level 1)	A (level 1)	A (level 1)
Dimension assessment					A (level 1)
Dimension 2: planning of community recreational physical activities based on the inclusion of people with physical-motor disabilities.					
2.1	A (level 1)	A (level 1)	A (level 1)	A (level 1)	A (level 1)
2.2	A (level 1)	A (level 1)	A (level 1)	A (level 1)	A (level 1)
Dimension assessment					A (level 1)
Evaluation of the variable					A (level 1)

The analysis of these results indicates that Dimension 1 (Preparation of Recreation teachers for the inclusion of people with physical-motor disabilities in community-based recreational physical activities) and Dimension 2 (Planning of community-based recreational physical activities based on the inclusion of people with physical-motor disabilities) show adequate results (A), placing them at level one with desired outcomes. This justifies the evaluation of the variable: the preparation of Recreation teachers for the inclusion of people with physical-motor disabilities, with adequate results also placing it at level 1.

To obtain greater reliability in these results, the Wilcoxon signed-rank non-parametric test was used. This method was used to determine the significance of the changes brought about by the methodological strategy during its implementation with the Recreation teachers in the municipality of Marianao, by comparing the median results at the two measurement points. This test allowed for contrasting the results based on the initial calculation of the distribution function with a significance level of 0.05. It was concluded that initially there was no normal distribution in the sample, and that it was composed of a small number of subjects, which corroborates the sample selection.

For the hypothesis testing of the non-parametric test, a significance level of 0.05 was also assumed; where if $p \leq\leq 0.05$, the change is significant. In these cases, the null hypothesis (Ho: $Me_D = 0$) is rejected, and the alternative hypothesis (Hi:), stated at the beginning of the section for the pre-experiment, is accepted $Me_D \neq 0$. For p-values > 0.05, there is no significance in the changes; at this point, the null hypothesis (Ho) is not rejected.

The p-value obtained from the Wilcoxon signed-rank test using SPSS statistical software (v. 25) and based on the stated assumptions, is 0.034. This suggests rejecting the null hypothesis and proceeding with the alternative hypothesis, which posits that there are changes between the first and second measurement points after the implementation of the methodological strategy for Physical Recreation teachers aimed at including people with physical-motor disabilities in community-based recreational physical activities. These changes suggest positive results for the variable under study, based on the aforementioned findings.

Based on these results, a search was conducted for similar studies to identify points of convergence. This process led to the discovery of authors such as Batista *et al.* (2024), who studied the topic from the perspective of teacher training to achieve more inclusive practices in Physical Education classes, without limiting preparation to professional development. Other researchers identified included Bérubé *et al.* (2026), who explored the potential of Physical Education to promote inclusion in school settings, addressing challenges of equity and diversity. These works, like the present study, agree on the necessity of preparing teachers or pre-service teachers to address recreational activities and physical exercise as agents of social inclusion.

CONCLUSIONS

The research highlighted the problems detected in the measurements of the dimensions and indicators that characterized the variable under study, all of which corroborated the

preparation needs of Physical Recreation teachers for the achievement of the inclusion of people with physical-motor disabilities in community recreational activities.

The development and implementation of the methodological strategy confirmed its suitability as a scientific response to the research problem, materialized in the positive transformation of the variable under study.

The implementation of the ATJ matrices based on the criteria of a group of experts and the results of the experiment carried out corroborated that this strategy corresponds to the current demands of Cuban Higher Education and satisfies the preparation needs of Physical Recreation teachers for the achievement of the inclusion of people with physical-motor disabilities in community recreational activities.

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