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Methodological guidelines for the inclusion of children with chronic kidney disease in Therapeutic Physical Culture classes

[Pautas metodológicas para la inclusión de niños con insuficiencia renal crónica en las clases de Cultura Física Terapéutica]

[Diretrizes metodológicas para inclusão de crianças com insuficiência renal crônica nas aulas de Fisioterapia Terapêutica]

Daylanis Gutiérrez Cruzata^{1*} , Lexy Lázaro Figueredo Frutos² , Maikel Tejada Piñeiro² 

¹University of Oriente, Faculty of Physical Culture. Santiago de Cuba, Cuba.

²University of Granma, Faculty of Physical Culture. Granma, Cuba.

*Corresponding author: dgutierrez@uo.edu.cu

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ABSTRACT

Introduction: Chronic kidney disease is a worldwide problem, affecting most of the population and constituting a real burden for health, well-being and quality of life. Therapeutic Physical Culture serves as a way to include children with



chronic kidney disease in physical exercise, but the participation of all students in learning remains a challenge.

Objective: to propose improvement actions to Physical Culture teachers in order to face educational inclusion, taking into account the diversity of students.

Materials and methods: It began with the realization of workshops for the care of this child with the action-participation research method and the methodological workshops became testing laboratories, operational plans and theoretical-methodological budgets; they are resources, means for the improvement of Physical Education teachers.

Results: it provides as a result methodological actions for the Physical Culture teachers who work with these children at home in the province of Santiago de Cuba to mitigate their barriers and limitations.

Conclusions: educational inclusion from the perspective of Therapeutic Physical Culture and the realization of physical exercise as a guiding principle, which requires important changes and transformations of the Cuban educational system and society.

Keywords: Curricular adaptations, Physical Culture, therapeutics, diversity, inclusion.

RESUMEN

Introducción: la insuficiencia renal crónica es un problema a nivel mundial, afectan a la mayor parte de la población y constituyen un verdadero lastre para la salud, el bienestar y calidad de vida y la Cultura Física Terapéutica sirve como vía de inclusión de los niños con insuficiencia renal crónica para la realización del ejercicio físico, pero sigue siendo un reto la participación de todos los educandos en el aprendizaje.



Objetivo: proponer acciones de superación a las profesoras de Cultura Física para enfrentar la inclusión educativa atendiendo la diversidad de los educandos.

Materiales y métodos: se comenzó con la realización de talleres para la atención e este niño con el método de investigación acción participación y los talleres metodológicos se convierten en laboratorios de ensayo, planes operativos y presupuestos teórico-metodológicos; son recursos, medios para la superación de los profesores de Educación Física.

Resultados: aporta como resultado acciones metodológicas hacia las profesoras de Cultura Física que trabajan con estos niños desde el hogar en la provincia de Santiago de Cuba para atenuar las barreras y limitaciones de estas.

Conclusiones: la inclusión educativa desde la Cultura Física Terapéutica y la realización del ejercicio físico como principio rector, la cual requiere importantes cambios y transformaciones del sistema educativo cubano y de la sociedad.

Palabras clave: adaptaciones curriculares, Cultura Física, terapéutica, diversidad, inclusión.

RESUMO

Introdução: a insuficiência renal crônica é um problema mundial, atinge a maioria da população e constitui um verdadeiro fardo para a saúde, o bem-estar e a qualidade de vida, e a Cultura Física Terapêutica serve como forma de incluir crianças com insuficiência renal crônica na realização exercício físico, mas a participação de todos os alunos na aprendizagem continua a ser um desafio.

Objetivo: propor ações de aprimoramento para professores de Cultura Física para abordar a inclusão educacional, levando em consideração a diversidade dos alunos.

Materiais e métodos: iniciamos com oficinas de atendimento a essa criança com



o método de pesquisa ação-participação e as oficinas metodológicas transformaram-se em laboratórios de testes, planos operacionais e orçamentos teórico-metodológicos; São recursos, meios para o aperfeiçoamento dos professores de Educação Física.

Resultados: resulta em ações metodológicas dirigidas aos professores de Cultura Física que trabalham com estas crianças a partir de casa na província de Santiago de Cuba para mitigar suas barreiras e limitações.

Conclusões: a inclusão educacional a partir da Cultura Física Terapêutica e a realização do exercício físico como princípio norteador, o que requer mudanças e transformações importantes do sistema educacional e da sociedade cubana.

Palavras-chave: adaptações curriculares, Cultura Física, terapêutica, diversidade, inclusão.

INTRODUCTION

The slow global economic growth, social inequalities and environmental degradation that are characteristic of our current reality present unprecedented challenges for the international community. Indeed, we are facing an epochal change: the option of continuing with the same patterns is no longer viable, making it necessary to transform the current development paradigm into one that leads us down the path of sustainable, inclusive and long-term development.

The 2030 Agenda for Sustainable Development establishes in Goal 4, guaranteeing inclusive, equitable and quality education and promoting lifelong learning opportunities for all whose ambition, among others, is to demonstrate that the achievement of quality education is the basis for improving people's lives and sustainable development.



Current societies promote equity in a broad sense, affirming the value of diversity and the need for inclusion. The concepts of Therapeutic Physical Culture and inclusion gain strength in which the Cuban educational system defends the need to assume a conception of humanistic, revolutionary and developing education of the potential of each individual, reaffirming the fundamental right of all children and young people to have access to education, sports, and recreation, recognizing that each one of them has characteristics, interests, abilities, potentials and learning needs that are unique to them. Education in Cuba and the practice of physical exercise is a reference in Latin America and to a great extent the achievements of this teaching are due to the triumph of the Revolution and particularly the support of Castro (2001) ...

On the island, all people have the right to quality education and the practice of physical exercise which is guaranteed from childhood to adolescence and older adults. With special interest in children and young people with some anomaly. (p.23).

It can be stated that chronic kidney disease is a worldwide problem, affecting most of the population and constituting a real burden on health, well-being and quality of life. Its chronicity is associated with long evolutionary periods, continuous treatments, and therefore, the need to prepare the individual to face the disease, prioritize prevention and promote healthy lifestyle habits.

According to the Center for Disease Control of Atlanta (CDC) (1994), "they are diseases of uncertain etiology, usually multicausal, with long incubation or latency periods; long subclinical periods, with a prolonged clinical course, often episodic; without specific treatment and without spontaneous resolution over time. In addition, they are of transmissible etiology, not reliably proven (except for some cancers) and of great impact on the population."



The guidelines of the economic and social policy approved in the framework of the VI Congress of the Communist Party of Cuba, regarding the social policy on public health; state in Article 159: to strengthen health actions in promotion and prevention for the improvement of lifestyle, which contribute to increase the health levels of the population with intersectoral community participation.

In the definitions given by these institutions of recognized prestige worldwide, it is specifically established that these are diseases of chronic course, long period of evolution and that they require continuous and permanent treatment.

The genesis of chronic non-communicable diseases is associated with risk factors related to unhealthy lifestyles. Many of the chronic diseases are conditioning factors for the emergence of others, which is why they are risk factors.

The dizzying scientific-technical development that has characterized the past 20th century, with greater flourishing in its second half, and that marks these inaugural years of the 21st century, has meant that, fundamentally in developed countries, epidemic diseases, generally communicable, have given way to Chronic Non-Communicable Diseases (NCDs), these diseases are now considered to be the scourge of the new century, due to their close link to the lifestyle that people assume to satisfy their needs. Most of them are the main morbimortality rates in many of these countries, and it is estimated that 60% of people worldwide are carriers of these diseases.

In Cuba, chronic kidney disease has a prevalence that coincides with international characteristics. It presents a rate of affected people of 0.92 per thousand inhabitants. Patients with the disease diagnosed in different degrees of development total 40,000, 1,500 of them in peritoneal dialysis and hemodialysis programs. The significant increase in the incidence of this disease is notable as the years go by, so that specialists affirm that it has a growing epidemic behavior worldwide. In the country, it is considered the seventh cause of death, being linked to the first causes of mortality.



In Cuba, as a vital need for the multilateral and harmonious formation of the individual and the promotion of health, the practice of Physical Culture is promoted for prophylactic and therapeutic purposes with the objective that all those who are carriers of any disease use physical exercise as an alternative treatment for their condition.

Studies carried out in Cuba coincide with others in the United States and Latin America, where four diseases are the most frequent cause kidney damage: arterial hypertension, diabetes mellitus, chronic glomerulopathies and polycystic kidneys. In the province of Santiago de Cuba, arterial hypertension predominates as the first cause of CKD, but in other parts of the country diabetes mellitus is the main cause.

When addressing the main conditions that frequently affect the development of chronic kidney disease, it is implicit that people suffering from these conditions constitute the main risk groups for the development and progression of this disease. Among these, the main risk groups are: diabetics, hypertensive patients, adults over 60 years of age, children with low birth weight, pregnant women and people with a history of chronic kidney diseases.

As is noticeable in the risk groups mentioned above, the number of people who are candidates for developing CKD at some point in their lives is alarming and increasing.

All these elements reflect, in essence, the significance that chronic kidney disease has in terms of health - disease, making clear the relevance of studies oriented to the knowledge and treatment of the disease by the medical sciences and other related sciences, in general.

In Cuba, due to the benefits achieved by state efforts in terms of public health, the morbimortality picture is equal to that of first world nations, with NCDs constituting the first cause of death. Among NCDs, a significant place is occupied by chronic kidney disease (CKD), which is defined as the slow, progressive, and irreversible loss of renal function, as a final result of a group of nephropathies.



With a profound humanist vision, the Cuban State defends that the sustainable development of a people plays a decisive role in achieving fair, equitable and inclusive societies. It is not intended to eliminate special schools. In Cuba, inclusive education is understood as a concept that recognizes the right of everyone to a quality education, regardless of their particularities and characteristics, which determine the variability in their development and that promotes their integration into society as full individuals in conditions to enjoy the possibilities it offers and contribute to its improvement.

Inclusive practice has been, is and will be a challenge for teachers, because assimilating in the classrooms a student whose abilities and skills differ, whose interests vary and whose expectations towards knowledge are a consequence of dissimilar causes where their educational needs are also different, when it is true that all students do not learn at the same pace or in the same way.

The school, as an institution, assumes a clear commitment to enabling students to acquire the skills to actively integrate into society, in this case from the practice of physical exercise. The attention and respect for the diversity of the students does not break with this commitment, as it would be a step backwards if certain students did not acquire the skills, they will need to access adult life and, of course, their integration into society.

The Ministry of Education ensures the human and material resources, so that in any context where these children are found, they achieve the maximum possible integral development and overcome the objectives according to each level. In addition to the intersectoriality achieved with other ministries such as Health, Culture, Labor and Social Security, and other organizations that support the inclusion of students in society.

In order to carry out the adaptation of the work with these children, the Physical Culture teacher must take into account their individual and social conditions to achieve the physical-therapeutic objectives, based on the recognition of their diversity and the real needs experienced in each school center and also the elements of access to the curriculum that can advance the process or hinder it. But, are the Physical Culture professionals prepared to carry out the curricular adaptations that constitute a key element in this



process where Physical Culture pursues the full development of individuality by receiving this type of pedagogical stimulation?

A challenge in this education is to raise awareness and promote an inclusive consciousness, and to eliminate barriers that hinder the full development of people with special educational needs, whether or not associated with a disability. However, there is still insufficient preparation to assume the educational attention to the diversity of learners.

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 1994) defines inclusive education in its conceptual document, where inclusion is seen as the process of identifying and responding to the diversity of needs of all students through greater participation in learning, cultures and communities, and reducing exclusion in education. It involves changes and modifications in content, approaches, structures and strategies, with a common vision that includes all children of the appropriate age range and the conviction that it is the responsibility of the regular system to educate all children.

Castro (2006) expressed that today we are looking for what in our opinion should be and will be an educational system that increasingly corresponds to equality, full justice, self-esteem and the moral and social needs of citizens. In Cuba, inclusive education does not imply the elimination of special schools; on the contrary, these institutions redefine their role within the educational system. Therefore, the role of the teacher is of vital importance in terms of improvement and methodological work, processes typical of the Cuban school to make curricular programs increasingly adjusted to all the students of the school, respecting their differences so that they all succeed in their learning and participate in equal conditions and full social justice.

Therefore, it is a challenge for the inclusion of students with special needs in regular schools and thus recognizes the right of everyone to a quality education, regardless of the characteristics that condition the variability in development and that encourage the participation of all in society as full individuals.



Furthermore, the understanding is expressed that it is only possible to approach a true conception of human development from the perspective of diversity, leading to the development of an ethical and political position that truly guarantees quality education for all. Inclusive education implies that all children learn together, regardless of their personal, social or cultural conditions, including those who have a disability.

The concept of curricular adaptations given by Pascual (2007), "curricular adaptation is understood as the accommodation or adjustment of the common educational offer to the possibilities and needs of each individual" (p.12). This concept of curricular adaptation is broad, based on it, we could speak of different levels of accommodation or adjustments, that is, different levels of curricular adaptation. Thus, the procedure for the design, development and application of curricular adaptations is regulated; it is a decision-making process on the elements of the curriculum in order to provide educational responses to the educational needs of the students by making modifications to the elements of access to the curriculum and the basic elements that constitute it.

When talking about learning difficulties, these can range from mild and transitory difficulties, which can be solved spontaneously or with elementary measures of reinforcement and/or educational support, to more serious and even permanent difficulties, which are more difficult to solve.

When physical exercise is carried out with children with chronic kidney disease, it is necessary to be aware of the level of involvement of these adaptation elements, since they will directly condition the progress of the students. Adapting the teaching of Physical Culture provides the opportunity to develop their potentialities and incorporate them into social life, developing all their dimensions (cognitive, affective, social, biological and motor, etc.).

Therapeutic Physical Culture as a subject allows teachers and students to feel comfortable with diversity and do not conceive inclusion as a problem, but rather as a challenge and an opportunity to enrich the learning environment. Children feel comfortable, open to showing their potential, accepting their difficulties and potential,



seeking the construction of their life ideals, and favoring the socialization process through socio-motor processes. It promotes integral development in order to improve their quality of life.

It is undoubtedly important that teachers have an initial professional training that allows them to have the tools to provide quality educational responses to the diversity of students in the teaching-learning process. On the other hand, it is also important that they have continuous professional training that allows them to be permanently trained and update in order to respond to the different emerging demands. In this sense, different studies emphasize the relevance of teacher education and training as a decisive factor in making the process of educational inclusion possible.

Some authors argue that an element that emerges with relevance is the attitude of teachers towards educational inclusion, as this can facilitate implementation or can constitute a barrier to student learning and participation.

Many authors propose the practice of physical exercise, however, they do not provide the necessary tool for its application. Studies conducted by Maniam and Subramanian (2014) revealed that a flexibility and strengthening exercise program, at a maximum exertion range of 60% to 80%, could improve fatigue and sleep quality in long-term hemodialysis patients. After patients performed this program, several reported that they were better able to perform routine tasks and felt more energetic after treatment.

Similarly, they also reported better nighttime sleep after treatment, probably because they felt less fatigued during the day and had no need for daytime sleep. These changes considerably affected the quality of life, where a general improvement was seen. On the other hand, Dziubek (2016), evaluated the effect of six months of aerobic exercise and muscle strength exercise, in hemodialysis patients, on symptoms of depression and anxiety. Training was carried out three times a week during the first two hours of hemodialysis, where it was concluded that there were significant decreases in depression symptoms and only in one item in anxiety symptoms.



Anding (2015), conducted a study in which he suggests that a combined strength and resistance training, with constant intensity adjustments, twice a week for 60 minutes, significantly improves quality of life in the subscales of physical function, physical performance and emotional limitations, evaluated using the SF36 questionnaire.

The lack of teacher training is a barrier that hinders the quality and equitable learning of inclusive education. In this sense, the objective of this research is to propose improvement actions to Physical Culture teachers in order to face educational inclusion, by attending the diversity of students.

MATERIALS AND METHODS

A child is chosen as a case study who lives in the home for nephrotic patients in Santiago de Cuba; he was born with a kidney problem inherited by the family, which is polycystic kidneys. The CVD Antonio Maceo, in this case the department of Therapeutic Physical Culture, is made up of eight teachers who constitute the sample. Except for two teachers, the rest are graduates, they are in the 4th year of the Physical Culture degree. Although the average work experience exceeds ten years, they have never received any advanced or postgraduate courses.

By applying scientific research methods, it is confirmed that they are unaware of the treatment and application of curricular adaptations for the planning of Physical Culture classes, in spite of the guidance received about the individual differences in children with chronic kidney disease.

The authors of this research take as reference the UNESCO document at the Forty-eighth meeting of the International Conference on Education, which sets out actions to address inclusive education and the need to prepare teachers.



Inclusive education cannot be put into practice without appropriate teaching and learning strategies, and without committed and competent teachers:

- Teachers must have an initial professional training that provides them with the tools to serve students with special needs.
- That all teachers have positive attitudes towards the diversity of learners and understand inclusive practices.

In order to accomplish these actions, workshops for the care of this child were started using the action-participation research method.

The methodological workshops become testing laboratories, operational plans and theoretical-methodological budgets; they are resources, means for the improvement of physical education teachers. They are characterized by being spaces for reflection that offer and where new and controversial contents are discussed; based on the diagnosis of the educational reality, they become a teaching demand to meet the educational needs of children with disabilities.

The psycho-socio-pedagogical and psychomotor characteristics of this child, the didactic insufficiencies of the group of teachers, as well as the ministerial indications of the Hemodialysis protocol and the National Institute of Sports, Physical Education and Recreation (INDER, by its Spanish acronym), which have to be solved as a whole, are taken into account.

The deficiencies detected by the diagnoses, taking into account the fulfillment of the above, make the methodological workshops have a contextual character; they must be flexible, open, dynamic, and integrate different educational dimensions that benefit the actions of the Physical Culture professional from the pedagogical processes.

The proposed workshops are based on the results of the pedagogical diagnosis made to the teachers. They are structured in two stages, in each of the stages of the process of organization and implementation of the workshops the participation of the group is present. This contribution of the teachers can be seen in the definition of the objectives,



the selection of the topics to be analyzed, the collection of information, the selection of instruments for the collection and analysis of information on the group, the analysis and interpretation of the information on the topics; which allows to determine the causes of the problem and to find ways to solve them.

For all these reasons, these methodological workshops become not only the space to analyze and instruct daily practice and scientific theory, but also a way to provide continuity to professional training (self-improvement). At the same time, they are a tool to encourage the improvement of the educational process of physical education teachers in their capacity as educators of these children, in order to achieve their incorporation into social life.

The workshops are based on the assumption of everyone's participation, as each one contributes knowledge and different experiences, which enrich the pedagogical collective. Participation was conceived as a process in which the teachers, more than just being present, mobilizing, exchanging criteria and giving their opinions; are sensitized, involves, decide and act in a committed manner.

The working method applied is based on the analysis and evaluation of professional practice and normative documents, and then incorporates the study of new scientific knowledge that updates the subject; which, in turn, allows them to return to the practice enriched with new content to transform the educational environment.

The workshops advocated are structured in two stages. The first one, aimed at carrying out theoretical actions to increase knowledge about the different special educational needs and the role of the teacher in the process of inclusive education; the second stage, aimed at practical actions to demonstrate how the Physical Culture class can correct and/or compensate the child's difficulties and their particularities. The Internal Teaching Practice (IDP by its acronym in Spanish) as an expression of the work component has a vital importance within the conception that is defended; it is projected through real situations that students appreciate in special and regular schools.



The actions are aimed at: instructing Physical Culture teachers in the inclusive educational process, attending to the needs of children with chronic kidney disease.

Theoretical workshops:

Workshop no.1.

Topic: Children with chronic kidney disease.

Objective: to deepen the knowledge on chronic kidney disease, its marked difficulties to access a full and harmonious development in society, taking into account its manifestations, characteristics, means and methods used by Physical Culture, promoting its social inclusion.

Contents:

Concept of chronic kidney disease. Classification. Kidney function. Incidence and prevalence of the disease in the community as a Public Health problem in Cuba.

Orientations:

To start the activity, the person in charge of directing the activity will welcome the participants, informing them of the objective of the workshop, specifying the duration time, place, participants, introducing other specialists, in this case the family doctor and the Physical Culture worker who will give other lectures.

Means: support material.

Participants: Physical Culture teachers, methodologists and teachers of other subjects, psychopedagogue.

Then, the specialist will present all the topics that will be developed and you can ask about those that may be of interest to your knowledge.



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- At the end of each lecture you can ask questions to find out the knowledge acquired and your satisfaction.

Workshop no.2.

Topic: relevance of educational inclusion.

Objective: to demonstrate the purpose and goal of inclusive education.

Content:

Conceptions around integration and inclusion.

Postulates and foundations that govern inclusive education.

Guiding documents that regulate inclusive education in the Cuban educational system.

Means: support material.

Participants: Physical Culture teachers, methodologists and teachers of other subjects, psychopedagogue.

Workshop No. 3.

Topic: Curricular adaptations: a necessity for success.

Objective: to explain the curricular adaptations to achieve full inclusion in Physical Culture classes.

Content:

Theoretical and methodological foundations of curricular adaptations.

Resources, support and assistance in the care of these children.

Elements to take into account for the implementation of curricular adaptations.



Means: support material.

Participants: Physical Culture teachers, methodologists, teachers of other subjects.

Practical workshop:

Workshop No. 4.

Topic: Therapeutic Physical Culture as a form of inclusion.

Objective: to conduct Physical Culture classes taking into account curricular adaptations.

Content: to analyze from concrete examples, the different ways of adapting the didactic components from the therapeutic Physical Culture (objectives, content, methods, teaching means, procedures and evaluation).

Means: support material.

Participants: Physical Culture teachers, methodologists.

Workshop No. 5.

Topic: exhibition of adapted media.

Objective: to demonstrate creativity and functionality of the different adapted media used in Physical Culture classes.

Content: creativity and design of adapted media.

Participants: Physical Culture teachers, methodologists.



RESULTS AND DISCUSSION

By implementing these workshops, the teachers were motivated by the inclusion of these children in the Therapeutic Physical Culture classes; the planning of these classes responds to the educational needs of the children, responding to their learning needs. The socialization of these children is complete, despite the fact that with chronic kidney disease it becomes a little difficult at times due to the characteristics of the disease itself.

These workshops were implemented in the period September 2022 to March 2023. In the province, there have been no workshops for the improvement in terms of how to implement curricular adaptations in the teaching-learning process from the Physical Culture classes and in the bibliographic review. There are no antecedents in the country specifically for the Physical Culture professional; however, there are studies that address the improvement of professionals but from the Health sector.

The workshops will continue to be carried out according to the context and the modifications in the centers of attention to these children. It is necessary the improvement of the Physical Culture professional with the advances shown by the educational process from the Therapeutic Physical Culture in the educational inclusion.

CONCLUSIONS

In the work, educational inclusion has been argued from the Therapeutic Physical Culture and the realization of physical exercise as a guiding principle which requires important changes and transformations of the Cuban educational system and society, the barriers that must be faced such as the professional skills of the teachers that may or may not slow down this process.



The preparation of the Physical Culture teacher constitutes a starting point to integrate and assume the changes demanded by the implementation of a system open to diversity and these actions, once implemented, achieve learning and inclusion of students with greater effectiveness and quality.

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The authors declare having competing interests.

Author contribution statement:

The authors have participated in the redaction of the manuscript and the documentary review.



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