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Physical exercises for the treatment of Genu Valgus in an adult patient

Ejercicios físicos para el tratamiento del Genu Valgo en un paciente adulto

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ABSTRACT

The research is carried out with the purpose of developing a system of physical, therapeutic, systematic and dosed exercises for the treatment of an adult patient with Genu Valgo in the therapeutic area of the Faculty of Physical Culture of the University of Guantanamo. A case study is carried out where six exercises are proposed for this purpose. Taking into account the opinions of the patient and the professionals surveyed, the proposal is feasible, contributing to improve the quality of life of the adult patient with Genu Valgo.

Keywords

Physical exercises; Therapeutic; Systematic; Dosed; Genu valgus; Treatment.

RESUMEN

La investigación se realiza con el propósito de elaborar un sistema de ejercicios físicos, terapéuticos, sistemáticos y dosificados para el tratamiento de un paciente adulto con Genu Valgo en el área terapéutica de la Facultad de Cultura Física de la Universidad de Guantánamo. Se realiza un estudio de caso donde se proponen seis ejercicios con este fin. Teniendo en cuenta las opiniones del paciente y los profesionales encuestados, la propuesta es factible, contribuyendo a mejorar la calidad de vida del paciente adulto con Genu Valgo.

Palabras clave

Ejercicios físicos; Terapéuticos; Sistemáticos; Dosificados; Genu valgo; Tratamiento.

INTRODUCTION

Throughout history, physiotherapy has been one of the most efficient ways to provide solutions to many physical diseases, either through natural or mechanical agents, so its knowledge and awareness on the part of the public is of great importance. population in order to improve the culture of physical exercises for this purpose.

Today this task is revitalized and strengthened with the creation of therapeutic salons as prioritized programs of the revolution to provide care through physical exercises to all those people who present any disease or ailment, as is the case of patients with Genu Valgo.

Taking into account that therapeutic physical exercises for adult patients affected with Genu Valgo in many cases are not applied with the required dosage, it is necessary to propose physical exercises with dosed loads for their treatment.

We speak of therapeutic physical exercise when body movements, patterns, postures and physical activities are carried out in a planned and systematic way with the aim of preventing or correcting alterations and risk factors related to health, improving, restoring or enhancing physical functioning and Optimize overall health, fitness, or sense of well-being.

Regarding the Genu Valgo, it coincides with what is stated on the website (La vanguardia, 2019) that defines it as the deformity of the knees that, when they are together, make the legs form an X. Whoever suffers from it cannot join or approximate the ankles when standing because the knees end up colliding with each other. It can only be achieved, in this case, that the heels are separated and the knees together.

Major treatment recommendations have included a wide range of options, ranging from lifestyle restriction and anti-inflammatory medications, exercise programs, and physical therapy. In the most complicated cases, surgery may be indicated. No consensus has been established on which is the most appropriate treatment for Genu Valgus.

There are several known cases where Genu Valgus resolves spontaneously, however, others require surgical intervention and rehabilitation.

In the diagnostic study carried out together with the previous bibliographic reviews, they allow detecting the following insufficiencies:

- The Genu Valgus is a pathology that requires treatment through Therapeutic Physical Culture, however, there are methodological limitations for its treatment in the areas of Physical Culture.

- Even Physical Culture professionals present deficiencies in essential theoretical, practical and therapeutic aspects, which is why their potentialities for the treatment of Genu Valgus in adult patients are wasted.

It is determined as a possible cause of these limitations the introduction of complementary programs in the therapeutic areas of Physical Culture without sufficient specific methodological guidelines that respond to a better treatment of Genu Valgus in adult patients.

Limitations in the treatment of Genu Valgus in adults in the therapeutic areas of Physical Culture and its necessary effectiveness.

All of the above motivated the author of the research to identify the following problem to solve: ¿How to improve the Genu Valgo pathology in an adult patient in the therapeutic area of the Faculty of Physical Culture of the University of Guantanamo?

There are numerous alternatives to solve the research problem, however, it is based on a conception that allows structuring a system of systematic and dosed exercises for the treatment of said pathology.

In correspondence with the problem, the following objective is proposed:

Develop a system of systematic and dosed therapeutic physical exercises for the treatment of an adult patient with Genu Valgo in the therapeutic area of the Faculty of Physical Culture of the University of Guantanamo.

Methods and techniques of investigation.

The general scientific method on which the research is based is the Dialectical-Materialist, based on it, methods of the theoretical level were used: Historical-logical, Analysis-Synthesis and Induction-deduction and empirical: Observation, Systemic-structural-functional, Interview, Survey, Document review, Nominal group. In addition, the percentage calculation technique was used.

DEVELOPMENT

With the revolutionary triumph, from the year 1959, very serious work began from the social, legislative and medical assistance point of view, with the purpose of guaranteeing the health and social assistance of people and the enjoyment of optimal quality of life.

Cuba has five prioritized health programs and one of them is the comprehensive care plan for certain patients from the rehabilitation program that is applicable to all levels of action including, in addition to health, social security, sports, culture, among others.

The Therapeutic Areas of Physical Culture began to be developed experimentally in 1982, in two municipalities of the City of Havana. With the implementation of these and their expansion, the process of massification of physical rehabilitation in the country begins.

In our country there are therapeutic physical exercise programs for the treatment of different pathologies, with good results because they are easy to apply in the community.

The Therapeutic Physical Culture encompasses a large group of programs, which through the technicians and professors who practice it, not only provide care to the disabled, patients with certain psychiatric illnesses, but also to pregnant, lactating, hypertensive, labor institutions for through work gymnastics, to housewives, to the elderly, among others. One of the conditions treated in rehabilitation is knee deformity.

The author (Álvarez, 1986) states that deformity, is the alteration of the shape of an organ or part, as a consequence of trophic lesions, traumas or functional gaps that occurred in the adult individual or in the developing fetus and are classified as congenital and acquired. The acquired ones are those that develop after the birth of the individual.

The knee is one of the three large joints of the lower limb, both congenital and acquired affectations of said joint, compromise the static functions of this limb. (Álvarez, 1986) classifies these knee conditions as:

- Chronic post-traumatic instability (capsuloligamentous injuries)
- Osteoarthritis
- Subluxation and recurrent dislocation of the patella
- Genu varu, genu valgum, genu recurvatum
- Osteochondritis of the anterior tibial tubercle

Valgum Knees.

It is the internal displacement of the knee. The longitudinal axis of the femur is directed in adduction and the tibia in abduction, forming an open outward angle between the two. (Alvarez, 1986)

Three types of treatment are used for knee deformities:

- Physical rehabilitation exercises
- Treatment with braces
- Surgical treatment

Diagnosis of the current state of Genu Valgus treatment in an adult patient.

Population

To carry out this work, a population made up of 1 adult person was used, which represents 100% of this universe. In addition, a methodologist, a head of discipline, six professors of Therapeutic Physical Culture from the Faculty of Physical Culture of the University of Guantánamo and a family doctor were taken into account.

In order to introduce ourselves to the problem under investigation and achieve a better understanding of it, an interview was conducted with the professionals in which the following elements were taken into account:

Teacher preparation (mastery of program content, INDER indications for working with these populations).

- General knowledge of the exercises for the treatment of adult patients with Genu Valgo by all the professionals interviewed.
- Exercise preferences for the treatment of adult patients with Genu Valgo.
- The knowledge of the professors and technicians of the physical culture on the Genu Valgo.
- The results showed that:
- 100% responded that they did not have specialized bibliography or other specific guidelines that respond to current pedagogical requirements for the treatment of adult patients with Genu Valgo; hence the need to implement exercises for theoretical-practical preparation that meets these needs.
- 100%, when referring to the INDER methodological indications, affirmed that these do not offer theories or exercises on the treatment of adult patients with Genu Valgo. In addition, all agreed on the need to implement dosed and systematic exercises that serve as the basis for this treatment.
- 100% agree on the importance of performing dosed and systematic physical exercises for the treatment of adult patients with Genu Valgo and the benefits they provide.

An interview was also conducted with the adult patient suffering from Genu Valgo who is treated in the rehabilitation room of the Faculty of Physical Culture of the University of Guantánamo, in which the following elements were taken into account:

- Carrying out exercises for the treatment of Genu Valgus in a systematic and dosed way.

- General knowledge about the benefits of performing physical exercises in a dosed and systematic way.
- Motivation to carry out physical exercises in a dosed and systematic way.
- Other symptoms or pathologies associated with Genu Valgus.

When carrying out the analysis of the interview applied to the adult patient with Genu Valgo it was possible to verify that:

- He himself refers that he does not perform physical exercises in a dosed and systematic way.
- He states that he has little knowledge about the benefits of performing physical exercises in a dosed and systematic way.
- He affirms that he lacks motivation to perform physical exercises in a dosed and systematic way, and infers that he works and has obligations at home.
- He refers to suffering from back pain.

Through observation it was possible to verify that the patient suffers from difficulty in the beginning of the march and disorder during the development of the same, tendency to fall and suffers from fatigue.

From the review of documents, it was possible to verify that the INDER Program for Therapeutic Areas exists, which has in its structure a series of exercise programs, including some oriented to the Genu Valgo, but only indicated for infants.

Therapeutic physical exercises for the physical rehabilitation of an adult patient with Genu Valgo.

As stated (TOPDOCTORS, 2022)

Major treatment recommendations have included a wide range of options, ranging from lifestyle restriction and anti-inflammatory medications, exercise programs, and physical therapy. In the most complicated cases, surgery may be indicated. No consensus has been established on which is the most appropriate treatment for Genu Valgus(...)

"The specific objectives of knee treatments are: to strengthen the adductor muscles and stretch the abductors, to strengthen the internal collateral ligament and tendons, to balance the load on the menisci" (Rahaingoniaina, 2011).

In this same sense (Physiotherapy for all, 2017) states that

At first, physiotherapy should be passive, although the patient should work actively as soon as possible.

In the last part of the rehabilitation, it is necessary to strengthen the muscles with some rehabilitation devices:

- Leg extender
- Leg press
- Leg curls

A correct rehabilitation allows to strengthen and stretch the muscles, improving coordination and walking.

There are several authors who propose physical exercises for the treatment of Genu Valgus. Such is the case of (Medical Exercise, 2021) which proposes "Step, Isometric Squats, One-legged Balance, Lateral Jumps, Lateral Leg Raises, Leg Raises, Deadlifts and Climbing".

Taking into account the theoretical contributions of the subject matter and the interview carried out with the patient, the criterion is assumed that with the application of systematic and dosed physical exercises, the patient with the Genu Valgo pathology can be rehabilitated.

The physical exercises that are proposed in the present work, were planned and dosed on the basis of a pedagogical notion, whose scientific platform grants Physical Culture teachers in the areas to appropriate the indications for their application.

It is valid to clarify that the dosage of the proposed exercises must be in correspondence with the evolution of the patient. For this, the indicator of anthropometric measurements that the therapeutic physical culture teachers must carry out on the patient in a period of time determined by them must be taken into account.

Exercise No. 1.

Name: Supported squat.

Objective: to strengthen the quadriceps femoris and gluteus medius muscles.

Media: Chair and long wooden cane.

Initial position.

Sitting on a chair holding the cane by one end with both hands while the other is between the legs resting on the floor.

Remove the chair and squat from a sitting position supporting yourself with the cane using both hands.

Methodological Indications: do not bring the cane close to your face when getting up from the chair. Keep arms extended at all times.

Exercise No. 2.

Name: Squat with support of one hand.

Objective: to strengthen the quadriceps femoris, gluteal, dorsal and erector muscles of the column.

Media: Chair and long wooden cane.

Initial position.

Sitting on a chair holding the cane by one end with one hand while the other is between the legs resting on the floor.

Squat from a seated position in the chair supporting yourself with the cane using one hand.

Methodological Indications: Do not bring the cane close to your face when getting up from the chair. Keep arms extended at all times.

Exercise No. 3.

Name: Isometric Back Support Squat with Cane.

Objective: to strengthen the quadricep femoris and bicep femoris muscles.

Media: Wall and stick.

Initial position.

Imitate the sitting position leaning your back against a wall, holding the cane by one end with both hands while the other is between your legs resting on the floor. Maintain the posture for the planned time.

Methodological Indications: Do not bring the cane close to the face when stopping. Keep the arms bent during the execution of the exercise.

Exercise No. 4.

Name: Isometric squat with back support.

Objective: to strengthen the quadricep femoris and bicep femoris muscles.

Media: Wall.

Initial position.

Imitate the sitting position leaning your back against a wall. Maintain the posture for the planned time.

Methodological Indications: Keep the arms flexed during the execution of the exercise.

Exercise No. 5.

Name: March forward with wide steps.

Objective: improve balance.

Media: Cane.

Initial position.

March forward with wide steps 80 cm apart, leaning on the cane with one hand. Maintain erect posture.

Methodological Indications: Do not bring the cane close to the body. Keep the arms semi-flexed during the execution of the exercise.

Exercise No. 6

Name: Isometric plank.

Objective: improve the strength of the shoulder, back, abdomen and gluteus.

Means: Therapeutic mattress.

Initial position.

Classic plank position, but with the elbows resting on the mattress and the hands clenched or down also resting on the mattress. Take the abdomen and knees off the floor keeping the back straight and eyes forward for a minimum of eight seconds, or longer depending on the therapy plan. Maintain erect posture.

Methodological Indications: Do not bring the cane close to the body. Keep the arms semi-flexed during the execution of the exercise.

CONCLUSIONS

The diagnosis obtained confirms the need to apply dosed and systematic physical exercises to adult patients with Genu Valgo.

Taking into account the opinions of the professionals and the patient, the proposed system of exercises is feasible and contributes to the quality of life of the patient. In addition, it serves as preparation for teachers who work in the therapeutic area of the Physical Culture Faculty of the Guantanamo's.University

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