

Physical-therapeutic exercises program for the hemiplegia treatment in Saint Vincent and the Grenadines

Programa de ejercicios físico-terapéuticos para el tratamiento de la hemiplejía en San Vicente y las Granadinas

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ABSTRACT

The purpose of this research was to develop a program of therapeutic physical exercises for the physical rehabilitation of hemiplegic patients of the Milton Cato Hospital in San Vicente, taking into account characteristics of the population and the country. The study developed is theoretical-descriptive; Research methods and techniques were used for its development as expert criteria, analytical-synthetic, inductive-deductive, historical-logical, modeling and analysis of documents. In the data processing, descriptive and inferential statistics procedures were used. The program was developed and subsequently assessed in a theoretical way, its relevance and affordability.

Key words: Physical exercises; Hemiplegia treatment; Cerebrovascular diseases; Neurological disorders

RESUMEN

La presente investigación tuvo como objetivo elaborar un programa de ejercicios físicos terapéuticos para la rehabilitación física de pacientes hemipléjicos del Hospital Milton Cato en San Vicente teniendo en cuenta características de la población y el país. El estudio desarrollado es teórico-descriptivo; se emplearon para su desarrollo métodos y técnicas de la investigación como criterio de expertos, el analítico-sintético, inductivo-deductivo, histórico-lógico, la modelación

y análisis de documentos. En el procesamiento de los datos fueron utilizados procedimientos de la estadística descriptiva e inferencial. Se elaboró el programa y posteriormente fueron valoradas de forma teórica, su pertinencia y asequibilidad.

Palabras clave: Ejercicios físicos; Tratamiento de la hemiplejía; Enfermedades cerebrovasculares; Trastornos neurológicos

INTRODUCCION

Cerebrovascular diseases are one of the most frequent causes of morbidity and mortality in the world. In those who survive the stroke, they produce a high degree of disability, due to motor, sensitive and cognitive sequelae. They also leave large expenses to the family and the state and their treatment is long in time.

When a brain injury occurs, it causes the destruction of nerve centers that are promoters of movement in certain segments of the body. Consequently, the physical impossibility of carrying out movements occurs, since the harmonic activity between the central nervous system and the osteomyoarticular system has been damaged.

The World Health Organization (WHO) states that more than 689 million people in the world, approximately 10% of the total population, suffer from some type of disability. Today it is known that each year there are 21 million disabled people, which is equivalent to 25,000 new disabled people every day around the world. (WHO 2014). Although not all of these figures correspond to people who have suffered a brain injury, the truth is that a large percentage is in this group.

Cerebrovascular diseases are the fourth leading cause of death, surpassed by cardiovascular diseases, cancer and diabetes mellitus in Saint Vincent and the Grenadines. They are the leading cause of neurological disability, followed by Alzheimer's disease and remain the main cause of admission to institutions due to loss of independence of adults, not only in San Vicente; but in the world. According to epidemiological studies, the frequency of mortality from this disease is more elevated in black people than in white people, having a higher prevalence in men than in women.

The level of suffering from hemiplegia is high in the world, being the leading cause of admission for neurological disorders, with a global annual incidence of around

800 cases per 100,000 inhabitants. For patients who present with this disabling syndrome as a result of central nervous system (CNS) injuries, the highest incidence of which is cerebrovascular accident, neurological treatment consists mainly of physiotherapy with adaptation to the changes imposed on posture and movements, and re-education . Physical exercise plays an important role in their recovery and their incorporation into society in an active way, bringing them closer to the maximum limits of their capacity and moving them away from the minimum limit of their disability.

As a consequence of the progressive aging of the population of developed countries, the incidence of stroke, whether hemorrhagic or ischemic, will increase, since after 55 years of age it doubles for each passing decade (Bobath 1992).

However, new knowledge and technologies in the medical field have allowed the survival of individuals suffering from these diseases to increase; leading to a decrease in mortality from stroke and an increase in life expectancy.

In the last 20 years there has been an explosion of knowledge about the "neuroplastic " potentialities and the capacity for motor recovery of the sequelae of the central nervous system. Physical exercise, with a therapeutic approach, contributes to the development of these potentialities, with an appreciable level of effectiveness in patients with neurological sequelae, especially during the first six months after the stroke.

For years the therapy of patients with hemiplegia was limited exclusively to re-educating mobility, with special emphasis on the recovery of muscle power in the deficit segments. Today, the concept has varied and rehabilitation is conceived as a complex process that results from the integrated application of many procedures to achieve that the individual recovers his optimal functional state, both at home and in the community to the extent permitted by the appropriate use of all their residual capacities (Authors Collective 2006).

A well-directed rehabilitation means that 85% of patients with residual paralysis are able to walk independently, even if it is inside the house and they need a cane or a foot orthosis. When rehabilitation treatment is started earlier, they will prescribe

maximum recovery possibilities, over time and the appearance of complications require a serious reduction of these possibilities (Authors Collective 2006).

Current treatment approaches in physical neurorehabilitation have focused their efforts on offering guides for therapeutic practice, using as theoretical support the development that scientific disciplines related to medical sciences have had in recent years and on this basis programs with different features to address the problem.

Dr. Navarro offers criteria to design treatments for patients with neurological conditions and they reveal the relationship between the characteristics of the conditions, the patients and the exercises, with the general aspects of the preparation of the treatments, being very useful for the physical rehabilitator.

Hemiplegia patients come to rehabilitation services by different routes, but the fundamental cause is that the injury suffered has made it impossible for them to perform some of the basic motor actions, or they have difficulty executing

some in a satisfactory way, and this generally causes them difficulty to reintegrate into society, a situation that can be solved through therapeutic physical activity.

Milton Cato Hospital in Saint Vincent is the only comprehensive medical center serving the entire population of Saint Vincent and the Grenadines (110,000 inhabitants). In this center, rehabilitation is carried out, as part of the health care process that is carried out to people with different disabilities for the correction, rehabilitation and / or compensation of their ailments and among these are patients with hemiplegia.

The Government of San Vicente, in the field of health in both primary and secondary care, has implemented programs to improve the general population, but patients who suffer from a stroke do not have a physical rehabilitation program that allows them allow them to be rehabilitated and recover their functions properly, revealing our problematic situation in the contradiction that exists between the need to rehabilitate patients with hemiplegia in Saint Vincent and the Grenadines

through physical activity, and the absence of a feasible program to apply in that population.

METHODS

In the developed research used research methods and techniques such as: expert criteria, analytical-synthetic, inductive-deductive, historical-logical, the modeling and analysis of documents that allowed determining the existing insufficiencies in the treatment of hemiplegia and that served as basis for the elaboration of the exercise system.

In the data processing after the proposal was applied, descriptive and inferential statistics procedures were used to theoretically assess its relevance and affordability.

RESULTS

The Hemiplegia

Hemiplegia is a disabling syndrome caused by lesions of the central nervous system of multiple etiologies, the highest frequency of which is cerebrovascular accident characterized by altered mental function and sensory perception that causes a psycho-socioeconomic imbalance in the patient and her environment.

It is one of the diseases that causes affections to the brain, which produces loss of voluntary movement of a part of the body, causing disabling symptoms caused by a certain degree of paralysis of the upper and lower extremities, ipsilateral, alteration of speech or language according to the cerebral hemisphere that is affected, affectation of the corporal scheme, alteration in sensory-motor sensory displacement, postural alterations and some mental disorders, in addition they may present alterations in the visual field.

Hemiplegia is a paralysis on only one side of the body: one arm, one leg, the trunk, and sometimes the face. It can affect more than one part of the body simultaneously. When the affected muscles are stiff, it is called spastic hemiplegia; if they remain flaccid and weakened, that of flaccid hemiplegia.

Hemiplegia is usually also defined as paralysis of one half of the body, but in reality the disorder corresponds to a functional disturbance of the activity of the muscles on the side opposite to the affected cerebral hemisphere, since not all the muscles

are affected equally, but that the failure of some muscles predominates over others.

Based on the signs of motor involvement by sectors, hemiplegia are usually classified as total, direct or alternating, proportional or non-proportional.

Traditional therapeutic approaches have focused on the treatment of spasticity, impaired reflexes, gait, quality of life, muscle strengthening; paying little attention to the variability that exists in patients with cerebrovascular accident with an evolution time of up to six months after the stroke occurred, and in those who have suffered the accident with an evolution time greater than one year; even recognizing that in the majority of patients who are treated early after the event has occurred, functional recovery, their quality of life will be much higher than in those patients who have had more than a year of evolution.

Through therapeutic physical exercises, important achievements are obtained in the rehabilitation of patients with hemiplegia. For this, different types of exercises and manipulations are used. Passive mobilizations, which are exercises performed on the patient without necessarily intervening, influence relaxation, improve joint function, and counteract spasticity. The active mobilizations that are the exercises that result from the Muscle contraction that is initiated by the patients' conscious process, involves the integration of all organ systems and these exercises favor the general muscular development of the patient, which facilitates postural corrections once standing is achieved, enabling the correction of posture, improvement of balance when ascending and descending stairs, and this determines the degree of self-validation for ambulation.

Elaboration of the physical exercise program for the treatment of hemiplegia in Saint Vincent and the Grenadines

For the development of the program, the exercise selection process and the conception of the theoretical model of what the program should be (curriculum, projective model) were taken into account, taking Dr. Ruiz Aguilera, A (2007), who refers that The content must meet the qualities of being flexible, adaptable, conciliatory, between what the recipient needs, wants for himself and needs from

the issuer and what that content requires to be taught to the recipient who is in a position to assimilate it. In this sense, it was established that:

- The structure: adjusted to the requirements for the rehabilitation of hemiplegic patients.
- The contents: that contribute to the improvement of the general and special physical condition of the patients, feasible to be applied with few economic and technological resources, but with efficient results, in correspondence with the individualized nature of the treatment and that allows orienting, controlling and evaluating the physical rehabilitation process, as well as the dynamics of its execution.

The program developed is based on Moore's principles of neurorehabilitation cited by Coll, (2012) cites in her Doctoral Thesis "Program of therapeutic physical exercises for the rehabilitation of hemiplegic patients in primary health care".

The program is enriched with the different neurological models and principles; this condition its flexibility and enables a more comprehensive care of the patient

Content of the exercise program

1. Exercises for the normalization of muscle tone and mobility training.
 - Retraining of balance and coordination.
1. Exercises for functional re-education of the upper extremities, trunk and gait.
 - Reeducation of the upper limbs and trunk.
 - Reeducation of functional gait.
2. Breathing exercises.

The teacher must take into account:

- Therapeutic physical exercise will always start with the healthy half body.
- Passive mobilizations must be carried out using smooth and coordinated movements.
- Do not exceed the degree of range of motion presented by the patient.
- Correct posture in the execution of physical-therapeutic exercises.
- Watch out for any symptoms evidenced by the patient during the class session.

DISCUSSION

Taking into account that the Milton Cato Hospital is the only comprehensive medical center that serves the entire population of Saint Vincent and the Grenadines, the physical-therapeutic exercise program was elaborated, which contributes greatly to the recovery of patients who suffer hemiplegia, since for the elaboration of it, the characteristics of the population of this country were taken into account as well as the criteria of several authors who have approached the subject that served as theoretical support for carrying out this research.

Once the program was formed, it was subjected to the criteria of 14 experts with a high level of competence by the Delphy method, who valued the relevance of its objective, the systematization of the activities to achieve the objectives, the theoretical elements that support it, the different activities, their harmony and integrality, the methodological structure and the correspondence between the structural elements of the program, its objective and its characteristics between very relevant and quite relevant. These results largely demonstrate the level of theoretical feasibility of the proposed therapeutic physical exercise program for the treatment of patients with hemiplegia.

As a way of conclusions, it should be noted that a physical-therapeutic exercise program was developed for the treatment of hemiplegia, appropriate to the conditions of Saint Vincent and the Grenadines. The program was evaluated by experts who agree on the feasibility of the proposal for its application.

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