

FitSalud.Web for physical activity in bodybuilding practitioners with chronic non-communicable diseases

Abstract

The increase in chronic non-communicable diseases is related to inadequate diets, toxic habits and decreased physical activity; On the other hand, there is an increase in the number of practitioners with these pathologies who attend bodybuilding gyms in the city of Santa Clara, for which a technological development investigation was carried out in eight gyms between the months of September 2019 and March. of 2020. The general objective was: to develop a website aimed at disseminating the medical-pedagogical indications established for the practice of physical activity in people with chronic non-communicable diseases. Methods such as documentary analysis, interview, user criteria, specialist criteria, and mathematical and statistical methods were used. The study showed that the methodological guidelines established in the gyms refer only to the regulations, regulations and normative documents for the operation of the premises. The proposed product meets in itself the medical - pedagogical indications established by the program aimed at practitioners with non-communicable chronic diseases who attend weight-building gyms in the city of Santa Clara, in addition to the adequate pedagogical treatment of trainers and teachers depending on of the health benefit.

Keywords: web, non-communicable chronic diseases, medical-pedagogical indications, physical activity.

Introduction

Chronic non-communicable diseases (NTCDs) and other damage to health is the term used by some researchers when dealing with the subject, since they are determined "...not communicable to man, nor caused by a specific biological agent, related causes are raised with the mode of conditions and lifestyles or other social factors, slow evolution and long duration clinically manifesting its complications..."(Collective of Authors, 2014, p.747) have a high social impact in the contemporary world because more and more, it increases the young and young adult population suffering from these pathologies.

In the world in 2016, more than 1.9 billion adults aged 18 and over were overweight, 650 million were obese; (39% of them men and 40% women), that is, obesity has tripled in the world in the last three decades, according to data provided by the World Health Organization (HWO, 2020).

In the region of the Americas, the countries most affected by obesity are Mexico, Argentina, Brazil and Cuba. Overweight and obesity are defined as an abnormal or excessive accumulation that poses a risk to health according to the HWO (2019).

In Cuba, NTCDs increase considerably every year, these pathologies behave in the age range of 25 to 59 years by sex as follows: arterial hypertension (HBP) with a total of 206.9, in the male sex 191.3, female 222.7, asthmatics in general 73.5, men 66.4, women 80.6; diabetes mellitus with a total of 51.5, in men 44.2 and women 58.8, per 1,000 inhabitants. (Ministry of Public Health, 2019, p.97)

In the province of Villa Clara, diabetes mellitus behaves in a rate of 66.9, arterial hypertension 253.0 and bronchial asthma 97.4 per 1,000 inhabitants. The municipalities of Santa Clara, Caibarién, Remedios, Camajuaní and Cifuentes increased their rates above the provincial rate.

In such a way that the HWO (2020) proposes within its guidelines the practice of physical exercises in order to improve cardiorespiratory, muscular functions, bone and functional health, reduce the risk of NTCD, depression and cognitive deterioration. Indeed, physical activity of any kind improves the capacities, physiological and psychological conditions in the human organism. Therefore, when regular physical activity is practiced, it is associated with a better perception of quality of life, related to health because it plays a determining role in healthy lifestyles.

Without claiming to exhaust all the studies, several authors (Mederos-Cortina, López-Hernández, Medina Arreguín, Blanco Cornejo, Brito Aranda, López Hernández, et al, 2015; Chávez Vega, Zamarreño Hernández, 2016; Martín Aranda, 2018) express the direct relationship that exists between physical activity and its health benefits, important aspects to recover, maintain the good organic and biopsychosocial functioning of the individual.

On the one hand, the increase in NTCD in young people and the young adult population is reduced; On the other hand, the incorporation of these to physical activity as part of personal self-care to maintain and improve the state of health is evident, as well as the opening of spaces for the performance of physical activities.

Associated with this problem, preliminary observations were made during the development of preparation courses carried out in the years 2018 and 2022 in the Faculty of Physical Culture, with the aim of training the trainers of bodybuilding gyms (state and non-state) inserted in the Santa Clara municipality.

During the preparation process, the lack of knowledge of the trainers about the medical-pedagogical indications to work with practitioners with NTCD was verified, which is why they are not applied in the training process in the bodybuilding gyms located in the city of Santa Clara.

Then, there is a need to use a computer resource for the dissemination of the medical-pedagogical indications established for the practice of physical activity in people with NTCD, who attend weight-building gyms to help meet the demands of trainers and practitioners in the city of Santa Clara.

It was proposed as an objective: to develop a website aimed at disseminating the medical-pedagogical indications established for the practice of physical activity in people with chronic non-communicable diseases in bodybuilding gyms located in the city of Santa Clara.

The result is easy to use and attractive due to its design, which determines its importance.

Materials and methods

A technological development investigation was carried out in eight non-state bodybuilding gyms in the city of Santa Clara, during the period from September 2019 to March 2020.

The study population consisted of eight trainers from eight bodybuilding gyms, it was selected intentionally and not probabilistically: being a gym trainer in the city of Santa Clara, availability and access to the gym.

Theoretical methods were used:

Analytical-Synthetic: it was used as an essential way to break down all the information collected during the inquiry process to form the theoretical foundation of the website: FitSalud and the benefits of physical activity in NTCDs.

Induction-deduction: allowed to arrive at certain theoretical-practical conclusions on the analysis of the problem, determine the characteristics of the object in the context of the investigation, the systematization of the main ideas and the conceptual interpretation of the empirical data found.

Systemic-structural: for the treatment of the research object, the relationships between its components, when establishing the different pages and links that make up the website.

Modeling: with the aim of designing the website according to technical requirements for its implementation in practice.

The methods used from the empirical level:

Documentary analysis: to verify the normative aspects embodied in the National Program for Therapeutic Areas, on the medical-pedagogical indications for the practice of physical activity in practitioners with NTCD; and the methodological indications established for bodybuilding gyms.

Interview with trainers: with the objective of diagnosing the knowledge that trainers of bodybuilding gyms possess about: the medical-pedagogical indications established for the practice of physical activity in practitioners with NTCD.

Questionnaire-type survey of users: the purpose of evaluating the product by the trainers of bodybuilding gyms as users.

Questionnaire survey to specialists: in order to assess the product. The evaluation of the product was carried out by the method of the criteria of specialists (5), for its selection the following was taken into account: scientific, academic category, administrative responsibility, years of experience, scientific results and willingness to participate in the study.

In the first stage, for the theoretical assessment of the product through the criteria of specialists, the indicators discussed were: need for the product, relevance, impact, benefits, and level of generalization. In the second stage, for the practical assessment of the product through user criteria, the indicators were: graphic environment, design, technical quality, aesthetics, and pedagogical environment.

The mathematical and statistical methods: facilitated the treatment of the information in Microsoft Excel, version 2019, of descriptive statistics, the analysis of absolute and relative frequencies, presented in tables and graphs.

Compliance with ethical aspects was taken into account when researching with human beings.

The investigation was structured in three stages:

Stage. 1. Diagnosis and processing of the information collected on the knowledge that trainers have of the medical-pedagogical indications established for the practice of physical activity, in practitioners with NTCD in bodybuilding gyms.

Stage 2. Design of the support through an exhaustive table work: determination of the content of the website; design and preparation of the digital product in the Adobe Dreamweaver application, use of other design support tools: PhotoScape v.3.6.1 and Cmaptools to organize the information in concept maps.

Stage.3. Application and evaluation of the product designed to disseminate the medical-pedagogical indications established for the practice of physical activity, in people diagnosed with NTCD who attend weight-building gyms in the city of Santa Clara.

The website was programmed in Adobe Dreamweaver, the product consists of several aspects: simple design, the incorporation of new knowledge, its systematization, purpose,

dissemination of the medical-pedagogical indications instituted for practitioners of physical activities with NTCD, healthy practitioners and for professors of careers or specialties that teach subjects related to these topics.

Results and discussion

The documentary analysis related to the National Program for Therapeutic Areas confirmed that it contains the medical-pedagogical indications for the practice of physical activity based on the characteristics of each pathological process.

It also establishes the characteristics of the physical activity to be carried out for each NTCD and defines the stages to be completed in each program: objectives, contents, duration, work intensity, frequency, types of exercises and physical capacities to be developed, refer to general form to physical activity for NTCD.

When examining the Methodological Indications (Resolution 54-2012) for work in bodybuilding gyms, it was verified that they refer to the regulations and normative documents for the operation of the premises, reflecting the absence of indications that establish the type and characteristics of the physical activity to develop with the practitioners. In this sense, it is important for the trainer or teacher of practitioners with NTCD to reflect on their educational practice, demonstrate in their training activity the mastery of knowledge and skills to carry out their work efficiently, with ongoing training.

During the interview carried out with the eight trainers of the non-state bodybuilding gyms in the city of Santa Clara and who allowed entry to the institution, the age range of 40 to 50 predominates in the sample with 4 (50%); Regarding gender, 6 (75%) of the coaches are male; Regarding the cultural level, the level of Medium Technician of other specialties stands out, not related to Physical Culture and Sports with 5 (62.5%) only 3 (37.50%) are graduates of Physical Culture and Sports, in addition to the working time that prevails in coaches it is part of a range with more than 10 years in the activity.

Regarding the knowledge that the coaches possess, they generally know what the NTCDs are, however, there are deficiencies regarding the specific particularities of the mentioned pathologies. On the other hand, there is no control over practitioners who attend non-state gyms with any chronic condition.

In the results of the interviews carried out with trainers, it was possible to appreciate that there are deficiencies for the application of the medical-pedagogical indications established in the National Program of Therapeutic Areas, based on the work with practitioners diagnosed with NTCD, who attend non-state gyms where the investigation was carried out.

In relation to the individualized training that the coach guides practitioners with NTCD, it was possible to verify that 3 (37.50%) apply the requirements established in the indications since they have a level of specialization typical of Physical Culture and Sport, the rest 5 (62.50%) do not use the indications because there is ignorance, lack of preparation and influence that they do not have training in the aforementioned specialty.

A total of 5 (62.50%) trainers expressed that they do not have the necessary resources to update on the medical-pedagogical indications related to NTCDs in the practice of physical activity.

Finally, the eight trainers (100%) consider it necessary for their professional performance to have a didactic medium that facilitates individual work in practitioners suffering from some NTCD, they consider that the website can be useful, practical and affordable as a means to learn about the training of practitioners, consulting the medical-pedagogical indications.

The evidence obtained showed that most of the coaches do not know the medical-pedagogical indications for practitioners with chronic non-communicable diseases, individualized planning is not carried out according to the pathology suffered by practitioners; Indeed, the need for a resource for the preparation of trainers based on the training aimed at people with NTCD who attend these gyms is evident.

In accordance with the needs found, the FitSalud website was prepared, made up of a sequence of pages well identified by labels and link buttons that lead, guide the user in a reliable and safe navigation without loss of information to be consulted in the training; gathers information aimed at trainers and practitioners with NTCD who attend weight-building gyms.

The FitSalud pages present a range of bright colors, which help energy and vitality for the practice of exercises, keys to encourage training through the use of the website. (Figure 1).

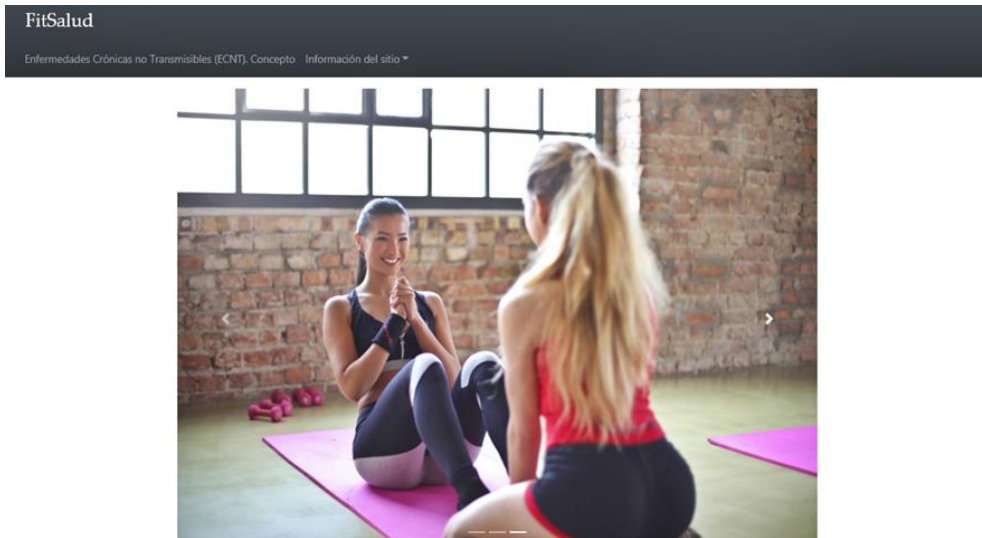


Figure. 1. Presentation of the site. Homepage

The site contains dynamic pages with information on: diabetes mellitus (DM), arterial hypertension (HBP), bronchial asthma (AB), obesity (Ob), characteristics of physical culture, mechanism of action, means of therapeutic physical culture. As well as other materials on exercises with the body, weights, nutritional guides, relaxation music and instructional videos for the practice of exercises by muscle planes.

Do you want to have a healthy body and suffer from a chronic non-communicable disease?
Here you will find what you need.







 <p>Obesity Metabolic disease, which is characterized by an excess of fat body in the organism...</p> <p>Click</p>	 <p>High Blood Pressure High blood pressure (HYPERTENSION) is defined as the persistent elevation of the blood pressure above the limits are considered as normals...</p> <p>Click</p>	 <p>Diabetes Mellitus Chronic metabolic disease, caused by an insulin deficiency effective, which translates into a increase in blood glucose and urine...</p> <p>Click</p>
 <p>Bronchial Asthma Chronic disease, in which the patient suffers from episodes of difficulty respiratory tract with noises in the chest in form of heeps...</p> <p>Click</p>	 <p>Nutrition Healthy diet standards for people with chronic diseases non-transmissible...</p> <p>Click</p>	 <p>Music Multimedia suitable for the practice of exercises in dependence of the type of action to be performed...</p> <p>Click</p>

Figure. 2. Contents presented by the pages of the FitSalud website.

An example of this is shown on the page (HBP) contains: concept, symptoms, etiological classification, non-pharmacological treatment, aspects to be taken into account in hypertensive practitioners and medical-pedagogical indications.

The diabetes mellitus page contains: concept, symptoms, classification of diabetes mellitus (World Health Organization), Influences of physical exercise on diabetes mellitus, medical emergencies, guidelines to prevent hypoglycemia, state of hyperglycemia (symptoms), guidelines for prevent hyperglycemia, control and medical-pedagogical indications.

While the bronchial asthma page contains: concept, classification in terms of clinical evolution, exercise-induced asthma and medical-pedagogical indications. And the obesity web contains: concept, classifications, etiology, anthropometric evaluation, anthropometric indices, body mass index, body structure in men and women, weight assessment, classification and medical-pedagogical indications.

It incorporates multimedia elements of audio and video files about downloadable training routines and exercises, the animations are specific and well thought out, attractive and interesting infographics.

The content is reflected in hypertexts with descriptive and updated links, use of hyperlinks on training routines, NTCDs, healthy eating guides, relaxation music, videos and important documents for the training of NTCD practitioners, as well as for teachers and practitioners. The pedagogical environment exhibits friendly interactions, the navigation buttons are clear, they present a logical order in the links.

As for the criteria of the five specialists: two are graduates of Physical Culture, 1 of Education and Informatics and 1 of Physical Medicine and Rehabilitation, 2 of them are heads of departments, all are Masters in Sciences and assistant professors, with work experience between 15 to 25 years, and from 4 to 8 scientific publications.

Table 1. Evaluation of the website according to specialist criteria

	Need of product	Relevance	Impact	Benefits	Level of generalization	%
Suitable	5	5	5	5	5	100
Poco Suitable	0	0	0	0	0	0
Inappropriate	0	0	0	0	0	0

Sources: own elaboration

The five specialists (100%) valued the indicators as adequate since a product is required to disseminate the medical-pedagogical indications for the practice of exercises in practitioners with NTCDs who attend bodybuilding gyms, it serves for the preparation of practitioners, trainers and teachers, it benefits the members of the health area where the gyms are located, the result can be generalized and continue with future research, it helps in the treatment of a health problem in a certain population.

According to the criteria of the eight (100) trainers as users of the website in their postgraduate preparation, they expressed that the environment presents an attractive audiovisual environment and appropriate to the topic, clear, interesting design, highlights important elements, shows technical quality and aesthetics in: graphics, titles, links, menus, windows, icons, hypertexts.

The hardware and software technical requirements for the environment: PC: Intel Pentium 4 model, 3.20 GHz, 3 GB RAM, monitor: HP1740 17, works with lower properties.

The materials to download are compatible with the operating system: Windows 7, 10 and Linux; with Internet browsers: (Mozilla Firefox, Internet Explorer, Opera, Safari, Google Chrome). The communication interface: HTTP protocol through TCP/IP connections, can be used with a browser and without the Internet.

Discussion

The society of the 21st century is characterized by the use of (ICTs) as a consequence of scientific-technological development, resources applicable to the practice of physical

exercise routines; that they meet the expectations directed to educational and health promotion activities; they affect the quality of life as the individual and collective existential satisfaction of the human being, between him and the environment in which he develops, apart from the perception of goal achievement, self-image and attitude towards life. (Garcia Velazco, 2020)

A website is used to disseminate the established medical-pedagogical indications for the practice of physical activity in practitioners with NTCD, it promotes the professional improvement of teachers, coaches and practitioners on the performance of exercises in people with chronic pathologies who attend gyms of bodybuilding, the practice of physical activity is increased. Likewise, the Physical Culture professional of any level of education must take into account the components of the physical load to properly dose the exercises and achieve the expected performance without affecting the health of the practitioners. (Rodríguez, A., Moré, M., Gutiérrez Pairol M., 2019)

It is an important component, because when you do physical exercise, you are not only acting on the body, but that has repercussions on the organism as a whole, be it at a chemical, energetic, emotional, or intellectual level. These benefits are currently recognized and endorsed by research carried out by the different medical specialties. This aspect is essential in the preparation of the Physical Culture professional to promote healthy lifestyles and based on health promotion, assuming the class as a fundamental scenario where it takes place. the integral formation of the student. (Rodríguez Milián A, Moré Estupiñán M & Gutiérrez Pairol M, 2019)

The adequate practice of physical exercises, prevents the control and reduction of these pathologies from physical activity, generates the practice of healthy lifestyles in healthy people and with chronic pathologies, becomes an instructive for teachers, coaches and practitioners. Indeed, regular physical exercise is a necessity for every human being, since its influence is a sure way to avoid organic deterioration, achieve a healthy life, delay the symptoms of aging, and avoid diseases. (Coll, JL, 2020)

Hence the importance of a digital product, easy to reproduce from any electronic device in order to socialize physical activity to maintain a healthy body and a higher quality aging. (fig. 3)

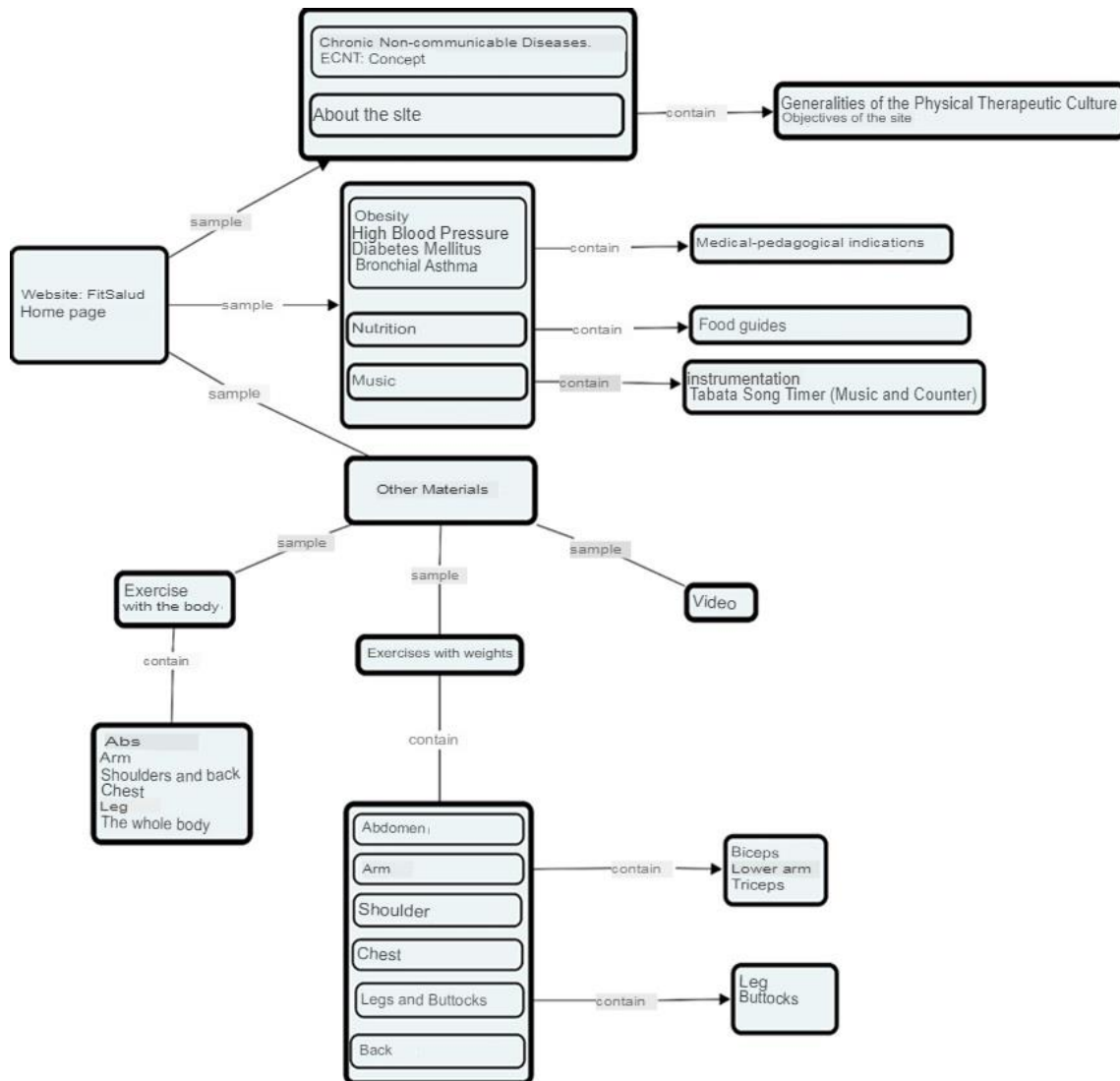


Figure 3. Concept Map. Description of the elements contained in the website. Own elaboration.

Conclusions

A product was developed that responds to the verified needs for the dissemination of the medical-pedagogical indications instituted in the practice of physical activity in bodybuilding gyms, which are located in health areas.

The product was evaluated by specialists and users as: necessary, useful, applicable, with quality in the contents treated and easy interaction. It can be used as a teaching aid in pre-post-graduate training in the specialties dealing with NTCs and their rehabilitation.

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