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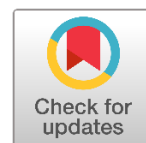
METHODOLOGY FOR THERAPEUTIC PHYSICAL ACTIVITY TO IMPROVE HEALTH CONDITIONS IN WOMEN IN THE CLIMACTERIC

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ABSTRACT

Introduction: a research was carried out related to a methodology of physical activity and Therapeutics to modify the health conditions of women in the climacteric, with the intention to reduce morbidity and mortality due to conditions that are triggered in this stage and improve their quality of life. Therefore, a methodology was developed for the therapeutic physical activity of women in the climacteric, which facilitated the reduction of diseases and I will improve their health conditions and quality of life.

Objective: Apply a methodology of therapeutic physical activity to improve the health conditions of women in the climacteric, in the Melissa textile workshop of the Municipality of Colombia, Las Tunas in the period from January 2024 to July 2025.

Method: An intervention study was carried out with a universe of 65 women and a sample of 25 women in the climacteric was selected, following inclusion and exclusion criteria. The participants were applied a therapeutic physical activity methodology of mild and moderate aerobic physical exercises of low and medium intensity, with a systematicity of 3 times a week in their workplace and a duration of 45 minutes, in addition to individualized exercises for home practices with a duration of 30 minutes. The effects on the improvement of their health conditions were evaluated through questionnaires and in comprehensive care medical consultations.

Results: Women between 45 and 49 years of age predominated, who showed a significant improvement in their health conditions, with a significant reduction in climacteric symptoms, including hot flashes, night sweats, irritability, insomnia and anxiety, in addition to body weight taking into account body mass index, blood pressure and symptoms related to the osteomyoarticular system. An increase in comprehensive health well-being was observed.

Conclusions:

The application of the therapeutic physical activity methodology systematically in their work environment and in their home of women in the climacteric allowed a positive impact on biopsychosocial well-being, helping to transform the unfavorable health conditions associated with the climacteric, changes were achieved in the general health status, improving quality of life, with the prevention and compensation of chronic non-communicable diseases and other conditions related to mental health.

Keywords: Woman in the Climacteric, Methodology of Therapeutic Physical Activity

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INTRODUCTION

Women of climacteric age require professional attention and access to information that allows them to improve their biopsychosocial conditions and the practice of therapeutic physical activity is a tool aimed at improving their health and well-being. In this sense, the present study proposes to carry out a methodology based on a therapeutic physical activity program focused on increasing the health conditions of women in the climacteric stage, to influence satisfactory health and well-being.

At an international level, the contributions made by [Matzumura and Gutiérrez \(2011\)](#) are considered significant, who highlight the importance of physical exercise in the climacteric stage as an effective lifestyle in reducing the symptoms and diseases associated with the climacteric and increasing their quality of life, as addressed by the studies carried out by [Chaufelan Gaon and Zambrano \(2016\)](#).

The incursions developed by [Yuncra \(2001\)](#) are relevant; [Martín et al. \(2017\)](#), Martinez, [González and Rivas \(2018\)](#) address establishing healthy lifestyle habits such as exercise that can reduce climatic symptoms and improve the quality of life of women in this phase. We consider that it is a necessity to promote the practice of physical exercise as a pillar to increase health conditions and reduce symptoms and diseases in women in the climacteric stage.

Of great interest is the research carried out by [Crisol \(2022\)](#) that highlights adherence to the practice of physical exercise associated with a reduction in somatic-vegetative and psychological symptoms respectively and the prevention of health problems.

At the national level, research carried out by [Romero Sánchez \(2009\)](#) stands out, [Acosta Vázquez \(2009\)](#), Rivera, [Romero Sánchez et al. \(2013\)](#), [Romero \(2017\)](#), [Romero and Sentmenat \(2018\)](#), They address the importance of therapeutic physical activity for the improvement of climacteric symptoms and the prevention of diseases. Which constitute an important reference for this research based on the possibilities they provide to increase the quality of life of women in the climacteric stage and their impact on comprehensive improvement in the bio-psycho-social, in the current moments in which demographically our country develops strategies to face population aging, emigration and after a COVID 19 epidemic that left multiple consequences.

This analysis allows us to reflect that it is necessary to address the improvement of women's health conditions in this stage of life that requires the fulfillment of various functions at the same time, with little time for physical exercise and contributes to a diminished health condition, which requires a priority in the care of women in the climacteric stage.

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In Cuba, Physical Education for adults has physical exercise programs aimed at improving women's health. Physical efficiency tests are applied, without delving into middle age, where important biological changes occur. [Lugones and Valdés \(2001\)](#) According to the literature consulted, characteristic symptoms appear in the climacteric, related to the regularity and duration of menstrual cycles, predisposition to cardiovascular diseases, alterations in their lipid profile, modification of their body composition and decrease in functional capacity. [Romero \(2017\)](#), [Avilés \(2022\)](#)

In this sense, it is inferred that it is necessary to analyze certain limitations that exist today in the methodological and investigative order which affect the evaluative procedures to be applied to women in the climacteric stage, since it is still valued from its generality. It would mainly be necessary to generate healthy attitudes and behaviors in women to carry out self-care practices and improve their health conditions.

The term middle-aged women is used by authors such as [Lugones and Navarro \(2006\)](#), who define it as the stage between 40 and 59 years [Romero Sánchez \(2009\)](#).

Knowledge about the climacteric in Cuba is results of studies carried out in Santiago de Cuba and Havana, to identify that natural menopause in healthy women occurs between 47 and 48 years of age, the latter being the average value. The most severe symptoms are observed in those with high blood pressure, however, those with artificial menopause suffer from a greater critical state of climacteric syndrome and cardiovascular risk. Gender roles and dysfunctions in family and couple dynamics increase the risk of suffering from climacteric symptoms. [Navarro \(1999\)](#).

Cuban women today have a high cultural level, which implies carrying out leadership actions that threaten their availability of time. The controversy is centered on the vision that is had of it in the country, where it plays a fundamental role. The climacteric process must be valued as a multifactorial phenomenon, considering that women develop different functions.

From this reality, the climacteric and menopause do not constitute a disease; However, the harmful symptoms that appear greatly impact their quality of life [Romero \(2017\)](#). Physical exercise is a significant indicator within healthy lifestyles, [Pérez \(2003\)](#).

In relation to the above, Cuba attaches great importance to health promotion programs aimed at the population, led by the National Institute of Sports, Physical Education and Recreation (INDER) and the National Ministry of Public Health (MINSAP).

During their analysis, it was observed that most of them propose methodological guidelines, also aimed at women's health care. From another point of view, these proposals do not classify in the scientific category of Program, because they lack specific elements.

Inder has created projects of great interest for women. We can mention Basic Gymnastics, Aerobic Room Gymnastics, Sanabanda, Gymnastics for Pregnant Women, and others such as Physical Activity for the treatment of obesity and hypertension. [Romero and Sentmenat \(2018\)](#).

Cuban consensus on climacteric and menopause March 15-19, 1999. Summary book Ministry of Public Health (Minsap), in 1991 created the climacteric and menopause group as part of the Cuban Society of Gynecobstetrics. One of its main lines of work is the multidisciplinary treatment of women.

The group analyzed specific topics about women in the stage and the treatment guidelines to follow.

In different reviewed investigations [Navarro \(1999\)](#), [Lugones and Valdés \(2001\)](#), [Pérez \(2003\)](#), [Acosta Vázquez \(2009\)](#), [Rivera, Romero Sánchez and Vega Armand \(2013\)](#), [Romero \(2017\)](#), [Torres, Romero and Sentmenat \(2018\)](#), [Medina López \(2021\)](#), [Avilés, López and Sánchez \(2022\)](#) the tendency to work with large population groups is evident; but they were permeated, Due to the lack of knowledge on the subject and not having the necessary information to evaluate the health conditions of middle-aged women, in relation to the specificities of the climacteric stage [Romero \(2017\)](#), it was possible to verify this in different provinces and municipalities of the country, which is revealed as a problematic situation.

These studies do not detect theoretical investigations that reveal a methodology to increase health conditions in women in the climacteric stage and the need for methodological actions to contribute to perfecting this process is demonstrated in theory and in practice.

The aforementioned is that our research is aimed at developing a methodology for therapeutic physical activity that allows the improvement of women's health conditions in the climacteric.

CONTEXT

The research is developed as part of the doctoral training process in Physical Culture and Sports Sciences and the research project of the University of Physical Culture of the province of Holguín, Cuba, related to therapeutic physical activity to improve the health conditions of women in the climacteric.

GENERAL OBJECTIVE

To evaluate the application of a therapeutic physical activity methodology to improve the health conditions of women in the climacteric, in the Melissa textile workshop of the Municipality of Colombia, Las Tunas in the period from January 2024 to July 2025.

SPECIFIC OBJECTIVE

- Distribute women in the climacteric taking into account the most predominant ages between 40 and 54 years.
- To evaluate the effect of therapeutic physical activity on the reduction of diagnosed climacteric symptoms.
- Assess the behavior of body weight taking into account the body mass index (BMI) and the effectiveness of the therapeutic physical activity methodology.

METHOD

Type of study: an intervention study was carried out that focused on evaluating the effectiveness of the application of a therapeutic physical activity methodology (aerobic exercises in the workplace and a 30-minute exercise routine to be performed at home) in improving the health conditions of women in the climatrium.

Universe: Consisting of 65 women belonging to the Melissa Textile Workshop in the municipality of Colombia, province of Las Tunas.

Sample: 25 women were selected, who met the inclusion and exclusion criteria.

Inclusion Criteria: ages between 40-54 years, acceptability of the woman to be part of the research, presenting climacteric symptoms.

Exclusion criteria: not belonging to the selected age range, presenting chronic decompensated conditions that do not allow them to remain stably in the practice of therapeutic physical activity.

A questionnaire was applied to identify the generalities and characteristics of the population group under study, in addition to individual interviews and comprehensive medical consultations: an initial one before starting the therapeutic physical activity program to diagnose the manifest symptoms related to the climacteric as well as the risks of suffering from chronic conditions.

Therefore, periodic comprehensive medical consultations were held to evaluate the effectiveness of the therapeutic physical activity program.

The therapeutic physical activity program (mild and moderate aerobic exercises of low and medium intensity), carried out systematically, lasting 45 minutes 3 times a week, combined a practice of individualized exercises taking into account the comprehensive biopsychosocial and family diagnosis of each of the participating women. The methodology was applied for 20 months. The proposed objectives and the particularities of the well-defined classes were fulfilled.

In this modality, low and medium impact were worked on. Reference is made to the use of dance therapy for cardiovascular work, localized aerobic gymnastics is used to tone and strengthen muscle groups.

RESULTS

Table 1

Table 1 Distribution of Women Taking into Account Age.		
Age	TOTAL	
	No.	%
40-44	7	28
45-49	13	52
50-54	5	20

The sample was made up of 25 women in the climatrium who gave their consent and were selected, at the ages of 40-54 years, women between 45-49 years old predominated, representing 52%.

Table 2

Table 2 Evaluation of the Main Symptoms Diagnosed After Applying the Therapeutic Physical Activity Methodology.			
Main symptoms	TOTAL		
	Symptoms Before No. %		Symptoms After No. %
Hot flashes	15	60	2 8
Night Sweating	14	56	2 8
Irritability	12	48	3 12
Insomnia	11	44	1 4
Anxiety	10	40	1 4

When evaluating the women in the climacteric, participants in the study were diagnosed before applying the therapeutic physical activity program, they presented hot flashes in 60%, night sweats in 56%. Irritability was identified in 48% followed by insomnia and anxiety for 44% and 40% respectively.

Therapeutic physical activity allowed climacteric symptoms to be positively modified. After the program it turned out that only 8% reported hot flashes as well as night sweats. Irritability prevailed in 12%. Insomnia and anxiety by 4%.

Table 3

Table 3 Classification of Blood Pressure Figures Before and After the Application of the Therapeutic Physical Activity Methodology.				
Blood pressure figures	Before after			
	No.	%	No.	%
Normal	5	20	20	80
Normal high	4	16	5	20
High	16	64	0	0

When examining the blood pressure figures, it was diagnosed that before the application of the therapeutic physical activity methodology, 64% of the women in the climacteric had high blood pressure, 20% had normal blood pressure and 16% had normal high blood pressure. We infer these results to the hormonal imbalance characteristic of this stage of a woman's life. By carrying out the therapeutic physical activity intervention, 80% of women manage to modify their blood pressure levels to normal and 5% to normal high blood pressure.

Table 4

Table 4 Assessment of Body Weight Taking into Account BMI Before and After Application of the Therapeutic Physical Activity Methodology.				
Body mass index(BMI)	TOTAL			
	BMI BeforeNo.	%	BMI AfterNo.	%
Normal (18.5 and 24.9)	7	28	19	76
Overweight (25.0 and 29.9)	8	32	3	12
Obesity (over 30)	10	40	3	12
Total	25	100	25	100

When carrying out an assessment of body weight before the intervention, 62% of the women in the climacteric had alterations in weight taking into account BMI, 40% were obese, and 32% were overweight. With the implementation of the therapeutic physical activity program, only 3 women, representing 12%, maintained the obesity and overweight category, resulting in 76% of the sample being in the normal weight category according to BMI.

DISCUSSION

The term middle-aged women is used by different authors (9, 10 and 11), and they define the stage as being between 40 and 59 years of age. In our study, women with symptoms associated with the climacteric between 40 and 54 years of age predominated, which is characteristic of Cuban women. The knowledge about the climacteric in Cuba is the result of studies carried out in other provinces of Santiago de Cuba and Havana, to identify that natural menopause in healthy women occurs between 47 and 48 years of age, the latter being the average value, which does not coincide with the sample since women were found in the perimenopause stage, which is characterized, first of all, by losing luteinization; and although menstruation has not stopped, women usually have monophasic cycles, in which menstruations appear and disappear in a few months.

The onset of neuroendocrine changes is approximately at age 35, and manifests itself with the presentation of sweating attacks, palpitations, heat waves, psychological symptoms: irritability, anxiety, insomnia) and changes in weight and change in menstrual pattern. These changes are confirmed by the reality of this study, since they do not present the same in all women. Hence it is stated that no woman is equal to another. (12, 13, 14)

During menopause, estrogen levels decrease in a woman's body, which can increase the risk of heart disease. High blood pressure most of the time does not produce symptoms, which is why it is advisable to have periodic check-ups and tests from the beginning of the menopause. Symptoms when they appear can be headaches, nosebleeds, restlessness, nervousness, insomnia. (15, 16)

Aldosteronism is one of the fundamental causes of high blood pressure. The adrenal glands produce too much of the hormone aldosterone. This causes the kidneys to retain salt and water and lose too much potassium, which raises blood pressure. (15)

Hormonal changes during the climacteric generate weight gain. These changes can make your blood pressure more susceptible to foods with salt. When this happens, your blood pressure may go up. (16)

Exercising frequently strengthens the heart. A stronger heart could pump more blood with less effort. Therefore, the force on the blood vessels also decreases. This lowers blood pressure. (17)

The climacteric is the stage in which women have the highest prevalence of obesity. The causes are multiple, some directly associated with hypoestrogenism, and others with physiological changes and age, which indirectly promote an increase in intake and a decrease in energy expenditure (15). On other occasions, women consume more calories due to anxiety. During this stage of the climacteric, a series of hormonal changes occur, some of which are associated with increases in weight and body fat, as well as changes in body composition. For example, estrogens affect the distribution of body fat in the hips and breasts. Hypoestrogenism mobilizes adipose tissue towards the trunk area of the body, and causes the gradual loss of protection against arteriosclerotic complications and increased fat in the abdominal area means that metabolic diseases may appear. (15).

In general, during climacteric, it is highly recommended to maintain an adequate level of therapeutic physical activity, since this has very positive effects on health (13,14). Benefits on improving climacteric symptoms, weight balance and prevention of cardiovascular diseases. All of this has an impact on an improvement in the health conditions and quality of life of women, not only on a physical level, but also contributes on an emotional level. (18,19)

CONCLUSIONS

The application of the therapeutic physical activity methodology systematically in their work environment and in their home of women in the climacteric allowed a positive impact on biopsychosocial well-being, helping to transform the unfavorable health

conditions associated with the climacteric, modifications were achieved in psychosomatic symptoms, blood pressure figures and body mass index were modified. Improving quality of life, with the prevention and compensation of chronic non-communicable diseases and other conditions related to mental health

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