The importance of physical activity for the prevention of Chronic Non-Communicable Diseases (NCDs)

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ABSTRACT
This research aimed to discuss the relationship between physical activity and NCDs, presenting scientific evidence that supports the importance of regular exercise for the prevention and control of these diseases. To this end, the method of literature review was adopted with a survey of studies and scientific articles related to the relationship between physical activity and NCDs. The search was conducted in databases such as PubMed, Scopus and Web of Science, using keywords such as "physical activity", "chronic non-communicable diseases", "prevention" and "control". The results showed that physical activity has been widely recognized as one of the main strategies to prevent and control NCDs, as it can reduce the risk of obesity, hypertension, dyslipidemia, insulin resistance and improve cardiovascular and mental health. Therefore, the promotion of physical activity can contribute to the prevention and control of NCDs, which can inform the development of more effective public policies and intervention programs in the field of physical education and health.

Keywords: Physical Education, Chronic Non-Communicable Diseases (NCDs), Well-being.

INTRODUCTION

Chronic non-communicable diseases (NCDs) represent a global public health challenge. These diseases, which include problems such as diabetes, cardiovascular disease, and cancer, have a slow and progressive evolution and affect millions of people around the world. In addition, NCDs are responsible for many deaths and generate a significant burden on health systems (MALTA, 2016).

However, despite their severity, many NCDs can, according to Figueiredo, Ceccon, and Figueiredo (2021), be prevented or controlled through healthy lifestyle habits, including regular physical activity. In this sense, physical activity has been widely recognized as one of the main strategies for the prevention and control of NCDs.

As Rodrigues et a. (2021) point out, regular physical activity has a few health benefits, including reducing the risk of obesity, hypertension, dyslipidemia, and insulin resistance. Consequently, physical activity has a positive impact on cardiovascular health, increasing cardiorespiratory fitness and reducing the risk of cardiovascular diseases.

Physical activity also improves bone and muscle health, reducing the risk of falls and fractures in older adults. It should also be noted that physical activity also has a positive impact on mental health. Regular exercise has been associated with a reduction in stress and anxiety, as well as improvements in sleep quality and self-esteem (ALMEIDA; RAMOS, 2021).

In view of this scenario, it is important to understand the importance of physical activity in the prevention and control of NCDs, as well as the mechanisms by which it acts in health promotion. Thus, the present study aimed to discuss the relationship between physical activity and NCDs, presenting scientific evidence that supports the importance of regular exercise for the prevention and control of these diseases.

To carry out the research, a bibliographic research was carried out, which is, according to Gil (2011), a research method that consists of the search and analysis of information contained in different types of bibliographic materials, such as books, scientific articles, theses, dissertations and technical reports, among others. These materials are selected based on specific criteria, such as relevance to the topic at hand, timeliness, and reliability of the sources.

In this bibliographic research, several studies and scientific articles related to the relationship between physical activity and NCDs were consulted. The search was conducted in databases such as PubMed, Scopus and Web of Science, using keywords such as "physical activity", "chronic non-communicable diseases", "prevention" and "control". Studies that addressed the benefits of physical activity in the prevention and control of NCDs were selected, as well as the mechanisms by which it acts in health promotion.

From this discussion, it is expected to contribute to the dissemination of information about the importance of physical activity for health and encourage the adoption of healthier lifestyle habits.

The investigation of the relationship between physical activity and NCDs can contribute to the advancement of scientific knowledge around physical education and health, subsidizing the development of more effective public policies and intervention programs. In this way, it is possible to develop health promotion strategies that are more targeted and effective, considering the particularities of each population and context.

DEVELOPMENT

CHRONIC NON-COMMUNICABLE DISEASES AND THEIR RISK FACTORS

According to Wehrmeister, Wendt, and Sardinha (2022), chronic non-communicable diseases (NCDs) are a set of health conditions that have a prolonged course and are, in general, irreversible. Among the main NCDs are cardiovascular diseases, diabetes, chronic respiratory diseases, fibromyalgia, temporomandibular disorders and cancer. These diseases account for a significant portion of morbidity and mortality worldwide, especially in both developed and developing countries.

Risk factors for NCDs are diverse and include genetic, environmental, and behavioral factors. Among the main behavioral risk factors are a sedentary lifestyle, inadequate diet, smoking, and excessive alcohol consumption. These risk factors are often associated with changes in the population's lifestyle, which accompany the demographic and epidemiological transition observed in many countries (WEHRMEISTER; WENDT; SARDINHA, 2022).

As Malta (2016) reiterates, obesity is one of the main risk factors for NCDs, especially cardiovascular diseases and diabetes. Obesity results from the imbalance between energy intake and expenditure, and is influenced by environmental factors, such as the availability of foods rich in fat and sugar and the reduction of physical activity at home, at work and during daily commuting.

A sedentary lifestyle is another important risk factor for NCDs, as regular physical activity is essential to maintain energy balance, prevent obesity, and reduce other risk factors for NCDs. Lack of physical activity is associated with a higher risk of cardiovascular disease, diabetes, and colon and breast cancer, among other conditions (MALTA, 2016).

In addition, Figueiredo, Ceccon, and Figueiredo (2021) highlight that smoking is a risk factor for several NCDs, especially respiratory diseases and cancer. However, there is also excessive alcohol consumption, which is a risk factor for several NCDs, including liver disease, cancer, and cardiovascular disease.

In summary, the risk factors for NCDs are multiple and interact in a complex way with genetic, environmental, and behavioral factors. The adoption of healthy habits, such as regular physical activity, proper nutrition, and smoking cessation and excessive alcohol consumption, is

essential to prevent and control NCDs. Therefore, it is important to study the role of physical activity in the prevention and control of NCDs, as the objective of the present study.

PHYSICAL ACTIVITY AND ITS RELATIONSHIP WITH HEALTH

Physical activity is, according to Carvalho and Nogueira (2016), one of the main determinants of human health. It can be defined as any bodily movement produced by skeletal muscles, resulting in an energy expenditure above resting levels. Regular physical activity has several health benefits, such as improved cardiorespiratory function, body composition, bone health, and psychological well-being.

Regular physical activity is associated with a reduced risk of chronic non-communicable diseases such as cardiovascular disease, type 2 diabetes, osteoporosis, and certain cancers. In addition, physical activity plays an important role in promoting mental health, contributing to the prevention and treatment of conditions such as depression and anxiety (CARVALHO; NOGUEIRA, 2016).

According to Ide, Martins, and Segri (2020), the practice of physical activity can be divided into three main types: occupational physical activity, leisure-time physical activity, and commuting physical activity. Occupational physical activity refers to those activities performed during work, such as weight lifting and walking. Leisure-time physical activity includes activities such as sports, dancing, and recreational walking. Commuting physical activity, on the other hand, is performed during the daily commute, such as walking or cycling to work or school.

From the perspective of Rodrigues et al. (2017), the impact of physical activity on health is explained by a series of physiological mechanisms. Physical activity promotes an improvement in blood flow, increasing tissue oxygenation and the elimination of metabolic products. In addition, physical activity promotes the release of hormones and neurotransmitters that have a positive effect on health, such as endorphins, which are associated with psychological well-being.

The amount and type of physical activity recommended for health promotion varies according to each individual's age, gender, fitness level, and health conditions. In general, the guidelines recommend at least 150 minutes of moderate physical activity or 75 minutes of intense physical activity per week, in addition to activities aimed at improving muscle strength and flexibility (RODRIGUES et al., 2017).

PHYSICAL ACTIVITY-BASED INTERVENTIONS FOR PREVENTION AND CONTROL OF NCDS

Chronic non-communicable diseases (NCDs) are a major public health problem, responsible for a large number of deaths worldwide. In this scenario, physical activity is one of the main forms of interventions for the prevention and control of these diseases (MALTA, 2016).

For Almeida and Ramos (2021), physical activity-based interventions can significantly reduce the risk of developing chronic diseases, such as cardiovascular disease, type 2 diabetes, high blood pressure, and obesity. These interventions are also effective for the treatment and control of these diseases in individuals who already have a diagnosis.

Also according to the authors, one of the main strategies to increase physical activity is the promotion of regular physical exercise programs. These programs should be tailored to the individual needs of each patient, considering age, gender, clinical conditions, functional capacity, current physical activity level, and personal preferences. Recommended activities include aerobic exercise, strength training, and flexibility, and these programs should be carefully planned and tailored to each patient's individual needs.

Aerobic exercises, such as walking, running, swimming, cycling, and dancing, are recommended to improve cardiovascular and respiratory health, as well as help control body weight. Strength training, such as weight lifting and using resistance equipment, is important for increasing muscle strength and improving bone density. Flexibility training, such as stretching, yoga, and pilates, is essential to maintain muscle and joint flexibility, prevent injuries, and improve posture (MATSUDO; LILLO, 2019).

When promoting regular exercise programs, it is important to ensure patient safety, especially those with pre-existing medical conditions such as heart, lung, or joint disease. Therefore, a prior medical evaluation and regular follow-up by a qualified professional, such as a physiotherapist or personal trainer, are necessary (MATSUDO; LILLO, 2018).

In addition, physical exercise programs should, according to Rodrigues et al. (2017), be gradually intensified and individualized to avoid injuries and ensure long-term patient adherence. It is important to encourage regular physical activity, with realistic and measurable goals, and to offer emotional and motivational support to help the patient overcome barriers and achieve their health and well-being goals.

Other interventions include the creation of environments conducive to physical activity, such as the construction of bike paths, parks, and green areas. These strategies encourage the performance of leisure-time physical activities and commuting, making the practice of exercise an integral part of the population's daily life. To this end, the implementation of health education programs and the promotion of a healthy lifestyle should be considered (CARVALHO; NOGUEIRA, 2016).

The implementation of health education programs and promotion of healthy lifestyle can include information on healthy eating, reducing alcohol and tobacco consumption, stress management, and adequate sleep. This information is essential for physical activity to be combined with a healthy and balanced life. Physical activity-based interventions are also effective in promoting mental health. Studies have shown that regular physical activity can reduce the incidence of depression and anxiety and improve the quality of life of individuals suffering from these conditions (IDE; MARTINS; SEGRI, 2020).

FINAL THOUGHTS

Considering the importance of chronic non-communicable diseases (NCDs) as a global challenge for public health, this study aimed to discuss the relationship between physical activity and NCDs, presenting scientific evidence that supports the importance of regular exercise for the prevention and control of these diseases.

From the literature review, it can be concluded that the regular practice of physical activity has a series of health benefits, including reducing the risk of obesity, hypertension, dyslipidemia, and insulin resistance, with a positive impact on cardiovascular health, bone and muscle health, and mental health.

In this scenario, understanding the relationship between physical activity and NCDs is essential to support the development of more effective public policies and intervention programs, capable of developing targeted and effective health promotion strategies, taking into account the particularities of each population and context.

In this way, it is possible to contribute to the dissemination of information about the importance of physical activity for health and encourage the adoption of healthier lifestyle habits, advancing scientific knowledge in the area of physical education and health.

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