# 46 - EFFECTS OF SEDENTARY BEHAVIOR IN PUBLIC HEALTH

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## 1.INTRODUCTION

A lot has been record about the benefits of regular physical activity in relation to health and quality of life across all ages, as well as its role in prevention and treatment of a range of morbidities (Nunan et al, 2013;. Jansen et al, 2010;. Chodzko-Zajko et al, 2009).

However, epidemiological studies have started investing in recent decades about the dangers of the lack of sufficient physical activity in daily life. The fact of not being physically active differs substantially to spend much time in sedentary activities (Owen et al., 2010). This type of activity corresponds to those whose energy expenditure from its realization does not show differences of resting levels and are therefore not classified as physical activities (Caspersen, 1985).

As well as physical activity, sedentary behavior may be present in different domains of life, these activities are becoming increasingly of the time people spend awake and take place of higher energy expenditure activities. The reduced daily energy expenditure associated with the increasingly caloric intake contributes to weight gain and central fat since childhood (Hamilton et al, 2008;. Chu, 2001).

Insufficient physical activity opens doors for the rise of chronic diseases: hypertension, diabetes, hypercholesterolemia, cancers (Owen et al, 2009). These chronic diseases, which usually afflict adult and elderly population, have occurred even in early ages in the population (Moreira et al., 2014). The association of sedentary behavior with the presence of morbidity and mortality has been observed regardless of the individual been physically active in moderate to vigorous intensity leisure activities (Thorp et al., 2011).

## 2.OBJECTIVES

This research aimed to conduct the survey, systematization and subsequent analysis of the information about the sedentary behavior and its effects on public health, in order to structure the content present in the literature to promote better understanding and guide health policy.

## 3.METHODS

Bibliographical review research, quantitative and qualitative, conducted through publications indexed in the database and systematically organized in order to identify studies and approaches involving sedentary behavior, in addition to holding quest for textbooks to assist in the theme of the conceptualization and their approaches.

In the present study it was not given the time frame of the publications in order to cover all information relating to the subject for the trial of their inclusion in this study, but were prioritized more recent studies of greater scientific relevance.

The scientific articles were selected through the initial analysis of their respective resumes, followed by the reading of the full text in case of reaching the requirements for inclusion. For wider coverage, still exploratory research was carried out by the bibliographic references of eligible studies for reading. Data analysis was carried out systematically, and publications classified according to their approaches, applications and settings.

The following descriptors for the research were used: "sedentary behavior", "physical inactivity", "public health". The databases for research were: Medline, Scielo, BVS-Medicine®, Scopus, Capes, SportDiscus as well as research on other electronic means of disseminating information and works mediated by Google® and Scholar Google® platform.

## 4. MULTIPLES DOMAINS OF SEDENTARY BEHAVIOR

The contemporary changes in people's daily lives in terms of their transport activities, occupational, home and leisure activities ultimately result in a marked decrease in energy expenditure. The term sedentary behavior refers to activities where energy expenditure is very close or similar to resting levels. These activities correspond to the sitting time people spend on vehicles as a way of transport, at work, in domestic activities and also in leisure moments, watching TV and using the computer (Owen et al., 2009).

The prevalence of adults that have at least three hours/day of sedentary behavior is greater than 50%. The effects magnitude on the results varied widely with respect to forms of sedentary behavior and in relation to individuals gender (Tebar et al, 2015; Garcia et al, 2014.).

Sedentary behavior has higher prevalence among younger individuals, with higher education and better socioeconomic status (Knuth et al., 2011).

## 5. SEDENTARY BEHAVIOR AND POOR HEALTH HABITS

Remaining for long hours in sedentary behavior has been associated with poor health habits. It was observed decrease in consumption of nutritious foods like fruits, vegetables, legumes, rather than the higher consumption of foods rich in fats and sugars, such as sandwiches, snacks, soft drinks and fried foods (Rombaldi et al., 2014). It was found also the association of sedentary behavior with smoking and alcohol consumption (Tebar et al., 2015).

In addition, prolonged TV watching submit the individual to influence of consumer advertisements, both food and alcohol, not only seen in adults but also in children and adolescents (Ramos et al, 2011;. Vendrame et al. , 2009).

The age precocity observed in sedentary behavior as well as in health outcomes have responded to a major public health problem. Sedentary children have a good chance of becoming sedentary adults, as well as sustain bad habits and health complications into adulthood. Nevertheless, the presence of obesity as a child / teenager makes it difficult to lose weight as an adult (Sichieri & Souza, 2008) and this condition yet committed your motion performance (Guarizi et al., 2013).

**6. PHYSICAL INACTIVITY AND MORBI-MORTALITY**

The leisure time lack of physical activity has been linked with the presence of one or more chronic diseases, especially in males. It noted by Garcia et al (2014) that 25% of workers have at least one chronic disease, which are strongly related to mortality from cardiovascular complications and also the overall mortality. Sedentary behavior at work was activity associated more consistently with the presence of chronic diseases. It was also a positive association of physical inactivity with hypercholesterolemia and hypertension.

Chronic diseases have unknown etiology, enclosed by multiple risk factors and long latency periods, prolonged course and not infectious origin, associated with physical limitations and functional incapacities, which may differ between gender and social determinants and can interact with biological predispositions (World Health Organization - WHO, 2005).

Anyway, leisure time physical inactivity has been for years associated with increased odds of obesity prevalence, since an early age (Ma et al., 2002). Studies found a negative association between time spent sitting and HDL cholesterol levels, as well as a positive correlation between the time sitting at work and the total concentration of triglycerides (Ki et al., 2011). Other studies have found that high levels of physical activity during leisure time are inversely related to lower body mass index and lower waist circumference in adults (Fernandes et al, 2010;. McCarthy et al., 2002).

**7. BARRIERS FROM PHYSICAL ACTIVITY ENGAGEMENT**

Due to the low prevalence of sufficient physical activity in the population, the determinants for its non-performing need to be investigated in order to promote understanding of the determinants of sedentary lifestyle and population impediment to practice higher levels of larger energy consumption activities.

Andrade et al (2000) found that the barriers to physical activity most frequently reported by the population account for lack of equipment; lack of time; lack of knowledge; fear of injury; and need for rest. The physical activity practice barriers to show differences by gender and location, and are relevant to their health and desire to perform. Anyway, correspond to factors that can be modified through the dissemination of information about promoting physical activity, access to programs and policies as well as the independence of equipment, specific local and abilities (Matsudo et al., 2001).

**8. ACTIONS AND HEALTH POLICIES**

Among the effective actions directed to reducing sedentary behavior levels in the population, the break of sedentary behavior has been linked beneficially to waist circumference, triglycerides and blood glucose levels (Healy et al., 2008). Concerning work environment, interventions in companies could stimulate such activities, promoting breaks in sedentary work routine for several periods in order to insert the practice of light intensity physical activity (Chastin & Granat, 2010). The physical activity influences the body composition of its practitioners, in order to preserve the skeletal muscles and promote healthy body fat (Hess, 1998).

Active transportation is another important physical activity domain which may contribute to increased levels of general physical activity as well as being inexpensive to its realization. It was observed that 75% of workers traveling by motorized transport to work, being too far from observed in China, but very close to reality in high-income countries such as the United States (Garcia et al., 2014).

The active transportation promotion in the population may lead to social, environmental and economic benefits, because it is a commonly used activity in daily life and is conducted in major population scale than physical exercise programs. However remains to be need to develop public policies focused on multi-sector actions that involve planning of urban mobility, health information and encouragement both by companies and by public managers, to be incorporated into an active lifestyle for workers , students and the population at large (Silva et al., 2012).

**9. CONCLUSIONS**

Sedentary behavior does not appear to be associated only with a specific chronic disease alone, but to a negative cardiometabolic profile indicators. The association between sedentary behavior and cluster health outcomes appears to be independent of other lifestyle habits.

It is therefore an important modifiable risk factor, where reducing it can promote lower rates of comorbidities and adverse cardiovascular profiles in the population, resulting in improved health status.

Physical activities, on the other hand, acts in regulating body energy balance and contributes to lower levels of overweight and obesity, thereby reducing the risk of chronic disease and it should, therefore, be encouraged in their diverse domains to increase their levels and as a way to break the sedentary behavior.

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**EFFECTS OF SEDENTARY BEHAVIOR IN PUBLIC HEALTH.**

**ABSTRACT**

Introduction: Staying for extended hours on low energy expenditure activities has been linked to the presence of chronic diseases, health problems and poor health habits by recent epidemiological studies. Objectives: Bibliographical research, systematization and present content analysis in the literature about sedentary behavior associated with health and its determinants in the population. Methods: A review literature research, focused on the survey population data from sedentary behavior and health outcomes. The search for publications was conducted in electronic databases of scientific data, using descriptors theme-related, besides the exploitation of bibliographic references of eligible publications for full-reading. The information has been structured systematically, in order to adjust the content to each predetermined topic and thus establish a linear reasoning and understanding of the theme. For more comprehensive guarantee, it was not carried out the temporal court papers, however was prioritized more recent studies and higher scientific relevance for review. Conclusions: Sedentary behavior appears to be associated with negative health profile rather than any specific chronic disease. Their association with health outcomes appears to occur independent of other lifestyle habits, which represents an important modifiable risk factor in public health promotion.

**KEYWORDS:** Sedentary behavior, Sedentary lifestyle, Physical inactivity, Public health.

**EFFETS DE COMPORTEMENT SÉDENTAIRE EN SANTÉ PUBLIQUE.**

**ABSTRAIT**

Introduction: Rester pendant de longues heures sur les activités de dépenses de faible énergie a été liée à la présence de maladies chroniques, les problèmes de santé et les mauvaises habitudes de santé par des études épidémiologiques récentes. Objectifs: recherche bibliographique, de systématisation et d'analyse de contenu présent dans la littérature sur le comportement sédentaire associé à la santé et ses déterminants dans la population. Méthodes: Une revue de la littérature de recherche, centrée sur les données de la population de l'enquête de comportement et les résultats sanitaires sédentaires. La recherche pour les publications a été menée dans les bases de données électroniques de données scientifiques, à l'aide liée thème des descripteurs, outre l'exploitation de références bibliographiques de publications admissibles à pleine lecture. L'information a été structuré de manière systématique, afin d'ajuster le contenu à chaque sujet prédéterminé et établir ainsi un raisonnement linéaire et la compréhension du thème. Pour la garantie plus complète, il n'a pas été effectuée les documents de la cour temporelles, mais a été la priorité des études plus récentes et la pertinence scientifique de révision plus

élevé. Conclusions: Le comportement sédentaire semble être associé avec le profil de la santé plutôt que négative une maladie chronique spécifique. Leur association avec les résultats de santé semble se produire indépendamment des autres habitudes de vie, ce qui représente un important facteur de risque modifiable dans la promotion de la santé publique.

**MOTS-CLÉS:** Comportements sédentaires, sédentarité, l'inactivité physique, santé publique.

**EFECTOS DEL COMPORTAMIENTO SEDENTARIO EN LA SALUD PÚBLICA.**

**RESUMEN**

Introducción: La estancia durante horas extendidas en actividades poco gasto energético se ha relacionado con la presencia de enfermedades crónicas, problemas de salud y los malos hábitos de vida por estudios epidemiológicos recientes. Objetivos: Realizar la literatura, la sistematización y el presente análisis de contenido en la literatura sobre el comportamiento sedentario asociado con la salud y sus determinantes en la población. Métodos: Una revisión de la literatura de la investigación se centró en los datos de población encuesta inherentes a los resultados sedentarios de comportamiento y de salud. Se llevó a cabo la búsqueda de publicaciones en bases de datos electrónicas de datos científicos, utilizando los descriptores relacionados con el tema, además de la explotación de las referencias bibliográficas de las publicaciones elegibles para completar la lectura. La información se ha organizado de manera sistemática, con el fin de ajustar el contenido de cada tema predeterminado y así establecer un razonamiento lineal y la comprensión del tema. En caso de garantía más amplio, no se llevó a cabo los documentos emporales, sin embargo se dio prioridad a nuevos estudios y una mayor relevancia científica para su revisión. Conclusiones: aparece el comportamiento sedentario que se asocian con el perfil de salud negativos en lugar de cualquier lesión específica. Su asociación con los resultados de salud parece ocurrir independientemente de otros hábitos de estilo de vida, lo que representa un importante factor de riesgo modificable en la promoción de la salud pública.

**PALABRAS CLAVE:** comportamiento sedentario, el estilo de vida sedentario, la inactividad física, la salud pública.

**EFEITOS DO COMPORTAMENTO SEDENTÁRIO NA SAÚDE PÚBLICA.**

**RESUMO**

Introdução: A permanência por prolongadas horas em atividades de pouco gasto energético tem sido associada à presença de doenças crônicas, agravos à saúde e a maus hábitos de vida por recentes estudos epidemiológicos. Objetivos: Realizar levantamento bibliográfico, sistematização e análise de conteúdo presente na literatura acerca da associação do comportamento sedentário com condições de saúde e seus determinantes na população. Métodos: Pesquisa de revisão de literatura voltada ao levantamento de dados populacionais inerentes ao comportamento sedentário e desfechos de saúde. A busca por publicações foi realizada em bases eletrônicas de dados científicos, com utilização de descritores inerentes à temática, além da exploração do referencial bibliográfico das publicações elegíveis para leitura completa. As informações foram estruturadas sistematicamente, de forma a adequar o conteúdo a cada tópico previamente determinado e estabelecer assim uma linearidade de raciocínio e entendimento do tema. Para garantia de maior abrangência, não foi realizado o corte temporal das publicações, entretanto foram priorizados estudos mais recentes e de maior relevância científica para revisão. Conclusões: O comportamento sedentário aparenta ser associado a perfil negativo de saúde e não a algum agravo específico. Suas associações a desfechos de saúde parecem ocorrer independentemente de outros hábitos de vida, o que corresponde a um importante fator de risco modificável na promoção de saúde pública.

**PALAVRAS-CHAVE:** Comportamento sedentário, Sedentarismo, Inatividade física, Saúde pública.