



Revista Andaluza de
Medicina del Deporte

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Original article

Physical activity and sleep of persons living with HIV/AIDS: A systematic review

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ARTICLE INFO

Article history:

Received 12 May 2016

Accepted 29 August 2016

Available online xxx

Keywords:

Physical activity

Exercise

Sleep

Quality of sleep

Human immunodeficiency virus

HIV/AIDS

ABSTRACT

The objective of this academic work is to present the evidences available in literature about the relation between physical activity and sleep in regards to individuals living with HIV/AIDS. The databases: Web of Science, PubMed/MEDLINE, Science direct, Bireme, Scopus and EBSCO, were used to identify four articles, published until September 2015 to be included in this systematic review. According to the analyzed studies, interventions with physical activity for persons living with HIV/AIDS were significantly associated with the quality of sleep, total sleep time, efficiency, decreased of number of awakenings during sleep and improvement of sleeping disorders (insomnia). Therefore, the results presented in this research paper makes evident that physical activity has a relation with the quality of sleep amongst this specific population group, causing benefits to the quality of life of the patients. Nonetheless, it has been noticed that there is a necessity for more research and investigation in regards to the topic presented.

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La actividad física y el sueño de las personas que viven con el VIH/sida: una revisión sistemática

RESUMEN

El objetivo de este trabajo es presentar las evidencias disponibles en la literatura sobre la relación entre la actividad física y el sueño en personas que viven con VIH/sida. Las bases de datos Web of Science, PubMed/MEDLINE, Science Direct, Bireme, Scopus y EBSCO, fueron utilizadas para identificar cuatro artículos publicados hasta septiembre de 2015, para su inclusión en esta revisión sistemática. Según los estudios analizados, las intervenciones basadas en actividad física, para personas que viven con el VIH/sida, se asocian significativamente con la calidad del sueño, el tiempo total del sueño, la eficiencia, la disminución de la fragmentación del sueño y mejoras en trastornos del sueño (insomnio). De esta manera, los resultados de este estudio evidencian que la actividad física está relacionada con la calidad del sueño de este grupo específico de población, generando beneficios en la calidad de vida de los pacientes. Aun así, se ha constatado la necesidad de realizar más investigaciones y estudios sobre el tema presentado.

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<http://dx.doi.org/10.1016/j.ramd.2016.08.001>

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Atividade física e sono de pessoas que vivem com HIV/AIDS: Uma revisão sistemática

R E S U M O

Palavras-chave:

Atividade física
Exercício
Sono
Qualidade do sono
Vírus da imunodeficiência humana
HIV/AIDS

O objetivo deste trabalho é apresentar as evidências disponíveis na literatura sobre a relação entre atividade física e o sono de pessoas que vivem com HIV/AIDS. As bases de dados Web of Science, PubMed/MEDLINE, Science Direct, Bireme, Scopus e EBSCO, foram utilizadas para identificar quatro artigos, publicados até setembro de 2015, para a inclusão nesta revisão sistemática. De acordo com os estudos analisados, intervenções com atividade física para pessoas que vivem com HIV/AIDS associam-se significativamente com a qualidade do sono, tempo total do sono, eficiência, diminuição da fragmentação do sono e melhoras nos distúrbios do sono (insônia). Desta forma, os resultados do presente estudo evidenciam que a atividade física tem relação com o sono dessa população, gerando benefícios para a qualidade de vida dos pacientes. Ainda sim, percebe-se a necessidade de mais indagações e pesquisas acerca da temática apresentada.

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Introduction

Acquired immunodeficiency syndrome (AIDS) is characterized as a clinical manifestation in which the agent is the human immunodeficiency virus (HIV), being thus acknowledged as a serious public health problem at a world level due to its profound suppression of the immunity, mediated by the T cells, in which makes individuals susceptible to opportunistic infections, neurological diseases and muscular hypotrophy.^{1,2}

In this manner, the antiretroviral treatment (TARV) appears as an associated tool for the search of better quality of life and survival, reducing thus 33% of the number of deaths caused by HIV infection. On the other hand, this treatment often is associated with the use of protease inhibitors, which can cause side effects.^{3,4}

Most of the side effects identified is associated to the metabolic processes, thus increasing the risk of metabolic syndromes, lipodystrophy, insulin resistance, hyperglycemia and redistribution of body fat as well as diarrhea, nausea, vomit, agitation and insomnia.⁵

Since this is, an infection that facilitates the onset of various other opportunistic diseases, due to the deterioration of the individual's immune system, evidences shows the appearance of neurological problems. Such as, sleeping disorders, which could be related to the deficit of dopamine release (produced by the adrenal glands) for the regulation of sleep, and which could influence the worsening of the patient's health.⁶⁻⁸ In this regard, the practice of physical activity appears as a non-pharmacological treatment, which aims to decrease the action of the treatment's side effects and the opportunistic diseases, thus providing numerous benefits for this population group.⁹⁻¹¹

Studies shows that the effects of regular physical exercise, provides benefits for sleeping, regarding hypothesis such as thermos regulation (the increase in body temperature facilitates the sleep induction). In addition, energy conservation (the increase of calorie output promoted during sleep because physical exercise increase the necessity of sleep) in order to obtain a positive energetic balance, establishing a condition for the sleeping cycle.¹²

Although, there are evidences which indicates that physical exercise provides beneficial effects and consequently a possible relation with a good quality of sleep, there are still no systematic analysis that explores the relation between physical exercise and sleep in individuals living with HIV/AIDS.^{13,14} And thus, aiding professionals that work with this population group with interventions and the targeting of actions.

Thus, the objective of this study is to verify the scientific evidences available on the relation of physical exercise and sleep in persons that living with HIV/AIDS.

Method

Selection criteria

The current systematic revision was elaborated observing the methodological procedures of The Cochrane Collaboration.¹⁵ The search of the descriptors and terms used were made through consultations on the *Descritores em Ciências da Saúde* (DeCS) through the portal of the *Biblioteca Virtual em Saúde* (BVS) and Medical Subject Headings (MeSH), through the portal of the U.S. National Library of Medicine (NLM).

The descriptors used were: "Physical activity", "Exercise", "sleep", "insomnia", "HIV" and "Acquired immunodeficiency syndrome", "actividad física", "ejercicio", "sueño", "insomnio", "VIH" and "Síndrome de inmunodeficiencia adquirida". For the variable physical activity were included the terms "Physical activity, Exercise, actividad física and ejercicio" and for the variable sleep, the terms used were "sleep, insomnia, sueño, insomnio".

The searches were made in the English and Spanish language, using the Boolean operators, "AND" and "OR" for the searches in English, and "Y" and "O" for the searches in Spanish. Additional researches were elaborated in the references of the selected articles; however, no relevant article was identified.

Inclusion and exclusion criteria

The studies identified through these methods were selected based on the following inclusion criteria: (1) studies with transversal, longitudinal and intervention delineation that examined the acute or chronic effect of physical activity in a biological measure or self-report of the total time of sleep, latency, efficiency, numbers of awakenings, phases 1, 2, 3, and 4 of sleep, slow waves of sleep, sleeping disorders and quality of sleep; (2) adults of both genders living with HIV/AIDS (in other words, average age ≥ 18); (3) making use or not of the antiretroviral therapy; (4) articles published in English or Spanish; and (5) be published until September, 2015.

The exclusion criteria were selected to assure that the studies included were well controlled. In this manner, the studies that presented the following criteria were excluded: (1) studies analyzing only physical activity without making a relation between physical

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