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Physical Activity Levels in Higher Education Students – Current Perspectives and Future Directions

Níveis de Atividade Física em Estudantes do Ensino Superior – Perspetivas Atuais e Direções Futuras

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RESUMO

Inúmeros estudos epidemiológicos têm destacado a importância dos níveis de atividade física, atestando sua contribuição para a promoção de estilos de vida ativos e hábitos saudáveis na transição para a vida adulta. Evidências anteriores reportaram uma diminuição considerável nos níveis de atividade física em jovens na transição do ensino secundário para o ensino superior, devido à necessidade de adaptação a novos ambientes e contextos, em detrimento da prática regular de exercício físico. Embora o aumento dos níveis de atividade física se apresente como uma prioridade em termos de políticas de saúde pública nos países mais desenvolvidos, poucos estudos investigaram sobre os níveis de atividade física em estudantes do ensino superior. Nesta breve revisão, foram analisadas criticamente as metodologias para aferir sobre os níveis de atividade física e os programas de intervenção recomendados para promover a atividade física e os hábitos de vida saudáveis. A avaliação dos níveis de atividade física pode ser importante para o desenvolvimento de estratégias de intervenção específicas que minimizem os hábitos de vida sedentários dos jovens do ensino superior.

Palavras-chave: Ensino Superior, Estudantes, Atividade Física, Estilos de vida saudáveis, programas de intervenção

ABSTRACT

Numerous epidemiological studies have highlighted the importance of physical activity levels, attesting to their contribution to promoting active lifestyles and healthy habits in transition to adulthood. Previous evidence has reported a considerable decrease in the levels of physical activity of young people in the transition from secondary education to higher education, due to the need to adapt to new environments and new demands, with detriment to the regular practice of physical exercise. Although the increase in physical activity levels is presented as a priority in terms of public health policies in the most developed countries, few studies have investigated the levels of physical activity in higher education students. In this brief review, methodologies to measure physical activity levels and intervention programs applied to promote physical activity and healthy lifestyle habits were critically analyzed. The assessment of physical activity levels can be important for the development of specific intervention strategies that minimize the sedentary lifestyle habits of young people in higher education.

Keywords: Higher education, Students, Physical activity, Healthy lifestyles, Intervention programs

INTRODUCTION

Previous studies indicate that the regular practice of moderate-intensity physical activity influences health and well-being, and plays an important role in the prevention of various chronic diseases (i.e., cardiovascular diseases, stroke, hypertension, obesity, diabetes, osteoporosis etc.) (Gaio et al., 2018; González-Valero et al., 2019; McKenzie, 2019; Rodrigues et al., 2019; Wu et al., 2017) and in maintaining psychosocial well-being by increasing self-esteem and self-efficacy, thereby reducing depression and anxiety (Vasconcelos-Raposo et al., 2009). The increase in physical activity levels is presented as a priority in terms of public health policies in the most developed countries (Kohl & Cook, 2013). In this regard, the university period is important for the establishment of behaviors that prevail throughout life, given that this period coincides with an extraordinary increase in autonomy and decision-making by young people (VanKim et al., 2010). The establishment of active lifestyle habits and healthy behaviors in this period is therefore of high importance, so that healthy lifestyle habits can be established that can prevail in adult life (Irwin, 2007). Engagement in the practice of physical activity in adult life occurs in earlier stages, including adolescence (Portella et al., 2021). However, previous studies showed a considerable decrease in the levels of physical activity of young people in the transition from secondary education to higher education,

due to the need to adapt to new environments and new demands, which has negative consequences in the regular practice of exercise (Gómez-López et al., 2010; Han et al., 2008; Irwin, 2007; Sinclair et al., 2005). Although it is during university life that less healthy lifestyle behaviors are established (Buckworth & Nigg, 2004; VanKim et al., 2010) particularly those related to physical activity (Han et al., 2008; Sinclair et al., 2005), studies on the level of physical activity of university students are scarce, and this is a research topic that urgently needs to be developed (Peterson et al., 2018). In fact, the assessment of activity levels and physical fitness, as well as the promotion of physical activity in university students, can be an important contribution to the establishment of active behaviors, which lead to the prevention of chronic diseases related to physical inactivity. (Arai et al., 2006; VanKim et al., 2010). Particularly in Portugal, there have been drops in physical activity levels in the transitional period between youth and adulthood, which translates into an exponential increase in morbidity and mortality, giving rise to clear public health concerns (Oliveira et al., 2018). For this reason, the detailed knowledge regarding behavioral patterns and physical exercise habits, creates a window of opportunity for the elaboration of specific programs of physical activity and/or sports for the promotion of healthy habits and lifestyles in higher education students (Arzu et al., 2006; Fagaras et al., 2015; Gallè et al., 2019; Osipov et al., 2018; Rajappan et al., 2015; Sukys et al., 2019; Wu et al., 2017). In view of the above, the present review sought to critically analyze the importance of detailed knowledge of the level of physical activity and healthy habits higher education students. In addition, we sought to verify which instruments are most used to measure physical activity levels and the intervention strategies propose to promote active lifestyles in higher education students.

MATERIAL AND METHODS

2.1. Literature Search Strategy

To carry out this review, the available literature was investigated by searching the Web of Science, PubMed and SPORTDiscus electronic databases. Articles published in 2022 or earlier were considered. The search strategy consisted of search words that combined one of the two primary keywords (“physical activity” and “healthy lifestyles”), with a second keyword (“university students” and “higher education students” using the Boolean operator. The inclusion criteria for these articles were: (1) relevant data on physical activity levels and healthy lifestyle habits in higher education students; (2) training programs to promote physical activity levels and healthy lifestyle habits in higher education students. Studies were excluded if: (1) they did not include data relevant to this study according to the inclusion criteria; and (2) were conference abstracts. To assess the quality of the studies, a validated protocol was used (Sarmento et al., 2018). The articles were screened based on the evaluation of the title and abstract. All articles that did not focus on the investigation were excluded. In total, 117 articles were considered relevant for this review. All articles were read in detail and evaluated for relevance and quality by two senior researchers with experience and relevant publications in the field. All articles that did not meet the criteria were excluded. After this procedure, 53 articles remained for analysis (Figure 1).

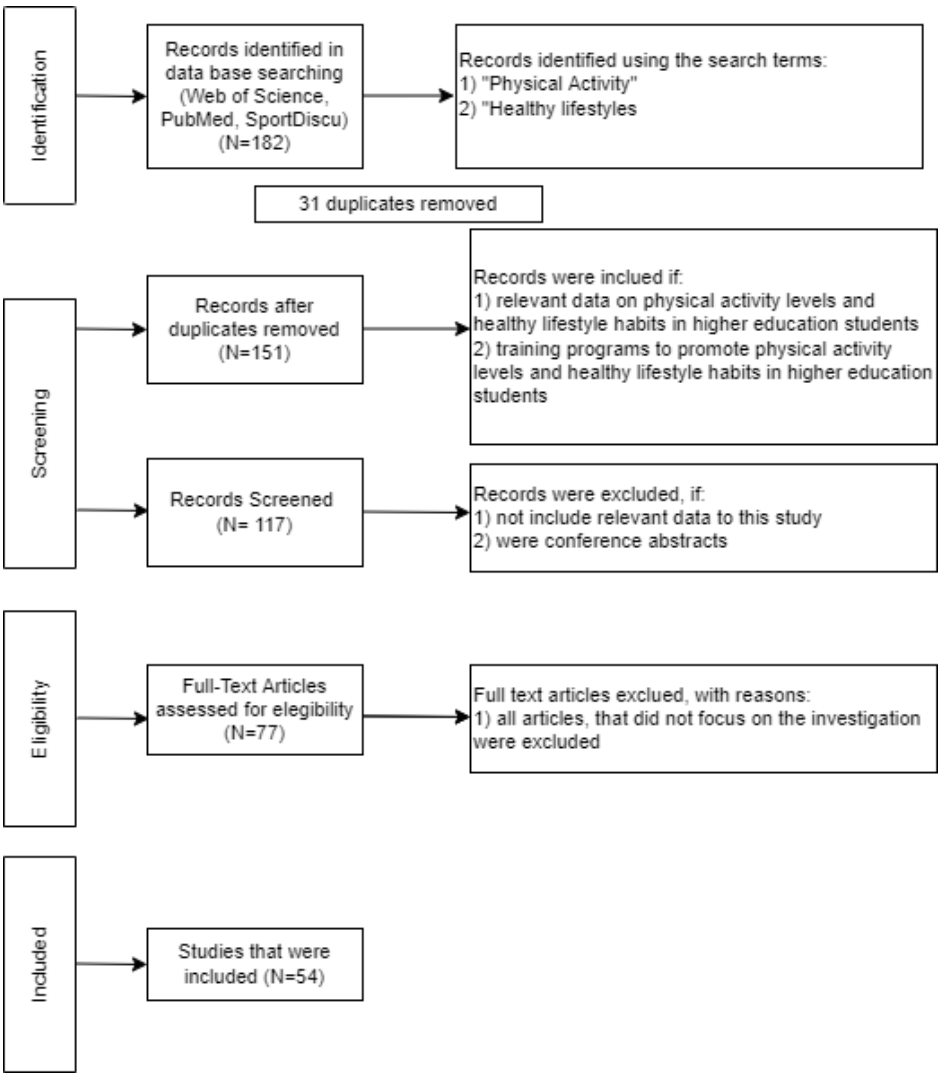

Figure 1 – Flow diagram adapted from PRISMA 2009 (Banno et al., 2018)

HIGHER EDUCATION – A TRANSITION PERIOD IN HEALTHY LI

Nowadays it is widely accepted that the regular practice of physical activity is understood as a fundamental component for the development of positive aspects related to health and well-being (Kumar et al., 2015; Okely et al., 2017; Warburton & Bredin, 2017; Wu et al., 2017). For this reason, concerns have been raised around the world about the level of physical activity in populations (Adams, 2006; Boreham et al., 2004; El Masri et al., 2022). Although the consequences resulting from low levels of physical activity are known in detail (Rodriguez-Ayllon et al., 2019), there is a tendency to reduce them over the last few decades (Guthold et al., 2018). These concerns have become an important research topic, with special emphasis on physical activity levels in adolescents and particularly in university students (Carballo-Fazanes et al., 2020; Peterson et al., 2018; Romero-Blanco et al., 2020). According to a previous investigation (Bray & Born, 2004), one third of active high school students became insufficiently active in the transition to higher education, in addition, it was estimated that the prevalence of physical inactivity among university students in 23 countries was 41% (Pengpid et al., 2015). This is essentially due to the fact that entry into higher education is marked by the enhancement of social relationships that can lead to the adoption of sedentary lifestyles, however this age group has been referred as suitable for the application of preventive measures and stimulation of habits and healthy lifestyles (Ferreira et al., 2007; Haase et al., 2004).

Corroborating this idea, previous studies referred a considerable decrease in the levels of physical activity of young people in the transition from secondary education to higher education, due to the need to adapt to new environments and new demands with negative consequences for the practice of physical exercise (Gómez-López et al., 2010; Han et al., 2008; Sinclair et al., 2005). This may be related to the fact that university students are not prepared for the transition from an education system in which physical activity is mandatory to another in which it becomes voluntary, requiring individual responsibility that they may not have or not be willing to take on (Hills et al., 2015; McKenzie & Lounsbery, 2013). This is, in fact, a critical period for the promotion of physical activity, mainly in women, who begin to reduce the level of physical-sports practice from the age of 11/12 years age (Han et al., 2008). The lack of interest in the practice of physical exercise daily is considered one of the main obstacles in the promotion of active lifestyles. Indeed, many people who start to practice physical exercises tend to find some degree of difficulty not only in maintaining the activity, but also in practicing it regularly (Gómez-López et al., 2010). Emphasizing this trend, there are several factors and obstacles to which students are exposed during university life that affect their sports practicing (i.e., time reduction, distance to available infrastructure, type of offer, etc.) (Wicker et al., 2009). For this reason, the analysis of the constraints inherent to the regular practice of physical activity during higher education is also a determining factor for the planning of strategies that aim to increase the motivation to practicing sports. Finally, due to the COVID-19 pandemic, reductions in physical activity levels and an increase in unhealthy eating (Ammar et al., 2020), have been reported as a consequence of social distancing resulting from lockdowns, which could also affect physical health. and mental health of young university students around the world (López-Valenciano et al., 2021).

Thus, based on the identified gaps, Universities should seek to promote and encourage the practice of physical activity and healthy lifestyle habits. In view of the above, it is urgent to characterize the levels of physical activity and the motivations of the students in higher education for the practice of physical activity. This can lead to the development of specific intervention programs that promote changes in habits and behaviors, reducing the prevalence of physical inactivity in the transition to adulthood.

INTERVENTION PROGRAMS TO PROMOTE HEALTY LIFESTYLES DURING HIGHER EDUCATION

So far, the investigations carried out on the level of physical activity in higher education students show favorable results (Bray & Born, 2004; Carballo-Fazanes et al., 2020; Newton et al., 2016; Pengpid et al., 2015). However, some disadvantages have also been reported, essentially related to the complex organizational structure of universities, which sometimes makes it difficult to implement large-scale programs, not least because the particular objectives of higher education do not prioritize the promotion of health and well-being (Newton et al., 2016), contrarily to what happens in the previous levels of education. Even so, the educational context of universities has a wide range of components that can be useful in promoting physical activity (i.e., facilities, teachers, proper intervention programs and ease of acquiring strategic partnerships). In order to create specific programs to promote physical activity levels in higher education, it is essential to first assess students' physical activity levels. In this regard, different methodologies have been used (i.e., questionnaires, activity self-registration and accelerometers or pedometers) (Kim et al., 2018; Sharp & Caperchione, 2016; Sun et al., 2017). Particularly with regard to questionnaires, five different questionnaires were found in the literature assessing physical activity levels, namely the Godin-Shephard Leisure-Time Physical Activity Questionnaire (Sharp & Caperchione, 2016), Global Physical Activity Questionnaire (Brown et al., 2014), the International Physical Activity Questionnaire short version (Bang et al., 2017) and its long version (Kattelmann et al., 2014).

Over the last few years, as a result of the assessment of the level of physical activity using this type of tools, several intervention programs have been carried out in different continents, North America (Brown et al., 2014; Sharp & Caperchione, 2016), Central America (Annesi et al., 2017), Asia (Bang et al., 2017; Cameron et al., 2015; Okazaki et al., 2014), Africa (Heeren et al., 2018) and Europe (Cameron et al., 2015). The intervention programs applied were varied and combined different strategies, however, it was possible to verify that the most used strategy were educational actions in health promotion and the promotion of physical activity that were developed face-to-face (Annesi et al., 2017; Okazaki et al., 2014) and online (Cameron et al., 2015). Additionally, most studies reported that students were encouraged to set short-term goals as a way of adhering to healthy lifestyles. In general, the studies carried out measured the level of physical activity weekly to verify changes resulting from the applied strategies, although other variables of interest were accessed (e.g., going to the gym, daily steps, expectations, pleasure in the activity, motivation). The longevity of intervention programs applied in higher education ranged between 3 and 15 months.

The practice of physical activity is undoubtedly beneficial for health, and for this reason it should be encouraged and promoted among higher education students. During the academic journey, students are exposed to academic work, deadlines, long hours of study, which can often become in physical and mental exhaustion. Regular physical exercise can contribute to the reduction of these symptoms. In addition, encouraging more active lifestyles with advancing age is essential, given the potential benefit in preventing certain adulthood diseases.

CONCLUSIONS AND SUGGESTIONS FOR FUTERE RESEARCH

This brief review sought to describe the strategies and instruments used in interventions to promote physical activity and healthy lifestyles in higher education students. Apparently, the effectiveness of interventions carried out in universities seems to be related to the combination of different strategies simultaneously. Regarding the instrument to access the level of physical activity, it was found that the validated questionnaires were the most used. Although several studies have been carried out around the world, there is an evident gap of studies carried out in Europe and particularly in Portugal. In fact, detailed knowledge about the level of physical activity of Portuguese higher education students can be extremely important in promoting healthy habits

and lifestyles, as previous evidence reports that Portugal has one of the highest rates of sedentarism in the European Union (Oliveira et al., 2018). In this sense, original studies in Portuguese university students could be extremely important to change behavioral patterns to increase levels of physical activity.

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