Hong Kong Journal of Occupational Therapy (2017) **29**, 19—25

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.hkjot-online.com

Hong Kong Journal of Occupational Therapy (HKJOT)

ORIGINAL ARTICLE

Leisure-time Physical Activity of Polish White-collar Workers: A Cross-sectional Study

Agnieszka Nawrocka [a,*], Arkadiusz Mynarski [a], Jarosław Cholewa [a], Wiesław Garbaciak [b]

[a] *Department of Health-Related Physical Activity, The Jerzy Kukuczka Academy of Physical Education in Katowice, Katowice, Poland*
[b] *Department of Theory and Methodology of Physical Education, The Jerzy Kukuczka Academy of Physical Education in Katowice, Katowice, Poland*

Received 8 July 2016; received in revised form 28 September 2016; accepted 14 January 2017

KEYWORDS
exercises;
health behaviour;
health promotion;
lifestyle;
occupations

Summary *Objective/background:* The aim of this study was to assess the leisure-time physical activity of Polish white-collar workers in relation to various health recommendations.
Methods: The study used a cross-sectional design with a convenience sample of 482 white-collar workers from Poland. Researchers recorded the leisure-time physical activity logs for 7 consecutive days of the week. Physical activity level was interpreted in relation to the World Health Organization and the American College of Sports Medicine recommendations.
Results: Among the workers, 42% of women and 53% of men declared moderate physical activity for at least 150 minutes per week, but only 23% of women and 18% men undertook activity in at least 5 days.
Conclusion: The results of the physical activity identified were significantly different from the American College of Sports Medicine and World Health Organization recommendations. The lower percentage of workers who met American College of Sports Medicine recommendations was caused by insufficient frequency of physical efforts.

Conflicts of interest: All contributing authors declare that they have no conflicts of interest.

* Corresponding author. Department of Health-Related Physical Activity, The Jerzy Kukuczka Academy of Physical Education in Katowice, Mikołowska Street 72, Katowice 40-065, Poland.
E-mail address: a.nawrocka@awf.katowice.pl (A. Nawrocka).

http://dx.doi.org/10.1016/j.hkjot.2017.01.001

Introduction

The health benefits of regular physical activity have been recognised and documented in numerous studies and scientific meta-analyses (Buffart et al., 2014; Li & Siegrist, 2012; Schmid et al., 2015; Stephens, Cobiac, & Veerman, 2014). They indicated that physical activity can be an effective tool in the prevention and treatment of the majority of noncommunicable diseases, which are the leading cause of death worldwide. The significant association between regular physical activity and all-cause mortality was also confirmed (Ekelund et al., 2015; Schmid, Ricci, & Leitzmann, 2015). Therefore, the diagnosis of the level of physical activity is an important task for the public health sector and enables precise identification of groups at high risk of hypokinetic diseases. Special attention should be given to the group of people whose level of physical activity at work is low. This group represents white-collar workers. It has been shown that white-collar occupations are important contributors to occupational sitting (De Cocker, Duncan, Short, van Uffelen, & Vandelanotte, 2014; Loyen, van der Ploeg, Bauman, Brug, & Lakerveld, 2016; Vandelanotte et al., 2015). In a study performed by Loyen et al. (2016), the odds ratio (OR) of sitting more than 7.5 hours per day was 5.00 for white-collar workers in comparison with manual workers (Hansen, Blangsted, Hansen, Sogaard, & Sjogaard, 2010). The other study by Hansen et al. (2010) found that white-collar workers who had been physically active at their leisure time perceived less stress and more energy.

The knowledge about health-related physical activity parameters (type, frequency, duration, and intensity) is disseminated in various physical activity recommendations. Currently, the recommendations disseminated by the World Health Organization (WHO) and the American College of Sports Medicine (ACSM) are the most popular in the world. In both recommendations mentioned above, a similar duration of weekly physical activity is promoted; however, the ACSM recommendations additionally contain the frequency criterion. One of the key differences between the discussed recommendations and the previously promoted recommendations (e.g., Instruction of International Physical Activity Questionnaire [IPAQ]) is to consider only moderate and vigorous physical activity. This is the result of numerous studies in which the health benefits of the activity of at least moderate intensity, especially vigorous physical activity, have been confirmed (Elliot et al., 2015; Gerber et al., 2014; Hupin et al., 2015; Loprinzi, 2015a).

It should be noted that the ACSM and WHO recommendations are related to the total physical activity. However, there is a need to separate the leisure-time physical activity from occupational physical activity. Many publications have shown that physical activity during work time might not be beneficial to health and may even be harmful. For example, Li, Loerbroks, and Angerer (2013), after analysing 23 epidemiological studies of adults ($n = 790{,}000$), proved that leisure-time physical activity is associated with a decreasing risk of cardiovascular disease, whereas moderate and vigorous occupational physical activity increases the risk of cardiovascular disease. In addition, Harari, Green, and Zelber-Sagi (2015) emphasised that physical activity undertaken at work should not be treated as a substitute for leisure-time physical activity. Numerous studies have compared the level of leisure time and recreational physical activity with various health recommendations (Arem et al., 2015; Mynarski et al., 2014; Nawrocka, Pronczuk, Mynarski, & Garbaciak, 2012).

Therefore, assessment of physical activity that is beneficial for health should include primarily leisure time activity. It refers especially to white-collar workers who, due to dominant sedentary work style, can undertake regular physical activity mostly in their nonoccupational time.

Furthermore, some studies indicated that low occupational physical activity significantly translates into a lower level of leisure time physical activity (Clemes, O'Connell, & Edwardson, 2014; JaKa, Haapala, Wolfson, & French, 2015). By contrast, it should be noticed that white-collar workers are usually people with high socioeconomic status, which significantly increases the level of physical activity (Biernat & Tomaszewski, 2015; Puciato, Rozpara, Mynarski, Los, & Krolikowska, 2013).

The aim of this study was to assess the level of leisure-time physical activity among Polish white-collar workers in relation to health recommendations disseminated by the WHO and ACSM. The second aim was to compare the differences between the percentage of workers meeting the ACSM recommendations and that of workers meeting the WHO recommendations, and identify which particular criteria of recommendations were not complied with.

Materials and methods

This study has been assessed by the Bioethical Commission of the Jerzy Kukuczka Academy of Physical Education in Katowice, Poland. It used a cross-sectional design with a convenience sample of 482 white-collar workers, including 256 women and 226 men (mean $[M]_{age} = 36.15$ years, standard deviation $[SD]_{age} = 12$; $M_{body\ mass\ index} = 24.5$, $SD_{body\ mass\ index} = 4.31$). Detailed characteristics of respondents are shown in Table 1.

Participants were recruited from purposely selected corporations in South Poland. The inclusion criteria for the study were: consent to participate in research and understand the full research programme, professional activity as a white-collar worker, work experience of at least 2 years, and full-time employment. Initially, 506 workers from selected corporations agreed to participate in the research; however, participants who did not meet all inclusion criteria and those with missing data were excluded from analysis. As a result, 482 male and female workers who met the inclusion criteria with completed data were analysed. Owing to a lack of time and reluctance to participate in time-consuming research among white-collar workers, physical activity logs were used as a research tool (B. Ainsworth, Cahalin, Buman, & Ross, 2015). The choice of the research tool was also dictated by the fact that most of the standardised questionnaires, designed to assess physical activity, are related to the total volume of the physical activity, while those that allow for evaluation of only leisure-time physical activity