Physical activity of men from Wroclaw compared with their discretionary income

Daniel Puciato, PhD

1) Faculty of Physical Education and Physiotherapy, Opole University of Technology: 76 Prószkowska Street, 45-758 Opole, Poland

Abstract. [Purpose] This paper attempted to determine the relationship between physical activity of men from Wroclaw and their discretionary income. [Subjects and Methods] The subjects were 1,601 male survey respondents aged from 18 to 65 years old. The International Physical Activity Questionnaire was used for the assessment of physical activity. [Results] Among respondents, low intensity physical activity was predominant. The level of physical activity of the respondents increased with their discretionary income. Statistically significant differences were observed between activities of low and high intensity and total activities in Wroclaw. [Conclusion] Discretionary income seems to be better predictor of physical activity than gross income, however, this should be verified in future research.

Key words: Physical activity, IPAQ, Income

INTRODUCTION

Physical activity is one of the most important elements of a healthy lifestyle of people of different ages. Deficiency of physical activity increases the risks of obesity, type 2 diabetes, osteoporosis, myocardial ischemia, degenerative changes on joints and certain cancers.

The results of empirical studies indicate that the level of physical activity is modified by socioeconomic factors such as: age, gender, place of residence, education, profession and economic status. Relationships between physical activity and economic status have rarely been analysed in previous papers and the results of previous studies are not conclusive. As some report improvements in physical activity with affluence, while in others multidirectional relationships were found.

Previous studies also did not consider economic status through the analysis of monthly net disposable per capita income, i.e. discretionary income. This is the amount of money available after deduction of: taxes and payments for utilities, food, clothes, commuting, etc.

Filling this specific research gap is the most important objective of this study, which aimed to assess the relations between physical activity and disposable income of men aged 18–65 living in Wroclaw, Poland.

SUBJECTS AND METHODS

This study was conducted in November 2014 and involved 1,601 men aged 18–65. Persons with discretionary income below 200 PLN constituted 29.04% (465 persons), between 201 and 400 PLN—22.92% (367 persons), and over 400 PLN—48.03% (769 persons). The study had a random design and had a pilot study character. Sampling was random and the age structure of the groups was similar to the age structure of the general male population of Wroclaw, Poland. The short form of the International Physical Activity Questionnaire was used for the assessment of physical activity. It contains 6 questions regarding the duration of physical activity performed by the respondents in a typical week of
their lives. The studied activities included physical effort performed at work, at home and its surroundings, when moving from place to place as well as during free time. Respondents were informed about the purpose and course of study and gave their consent. The following statistical characteristics were calculated: means, standard deviations, minima and maxima. The significance of differences between groups distinguished by income were estimated using the non-parametric Kruskal-Wallis ANOVA test. Statistical significance was accepted for values of \( p < 0.05 \). The calculations were performed using computer software, IBM SPSS Statistics 20.

**RESULTS**

Table 1 presents the basic statistical characteristics of physical activity of the surveyed men according to their monthly discretionary per capita income. In each group discretionary income group, low physical activity was the most often undertaken, while high physical activity was the least popular.

Among the male respondents, discretionary income was a factor significantly differentiating the amount of physical activity performed. The exception was physical activity of moderate intensity, for which differences between the discretionary income groups were not statistically significant. In respect of total physical activity and activities of low and high intensities, the difference between groups were statistically significant, while the amount of the performed effort increased with increase in monthly net disposable income (Table 2).

**DISCUSSION**

Among the surveyed men from Wroclaw, the predominance of low intensity effort in weekly physical activity, as reported by previous studies, was evident. This can be dangerous as the positive effect of physical effort on human well-being is related to sufficiently high volume, frequency and intensity of exercise. World Health Organisation recommends performing physical effort of moderate intensity for 150 minutes, or of high intensity for 75 minutes a week in order to maintain or improve health. Also, this type of physical effort should performed at the minimum in 10-minute periods.

The present results indicate the positive correlation of the physical activity of surveyed men with the amount of their monthly disposable per capita income. Similar results were reported by Biernat and Hoebel et al. in their analyses of...
economic status as expressed by gross income. The author considers that this proves the increasing importance of physical activity performed in free time as part of total physical activity. More affluent people are able to bear the costs related to payable forms of exercise leisure, e.g. purchase of vouchers for leisure centres, buying sport and leisure equipment, paying for transportation to leisure activities or possibly accommodation outside their domicile. The analysis of other studies suggests that monthly disposable per capita income may be a better predictor of physical activity than gross income, which was analysed in previous works, since it is possible that despite the relatively high gross income of the surveyed, their expenses were also high making their discretionary income low or even non-existent. Expressing economic status as disposable per capita income eliminates this problem of methodological nature.

This study found there were significant differences in the levels of physical activity between men with different levels of net disposable incomes. The most physically active also had the highest incomes, while the least active were those with the lowest incomes. It was found that net disposable per capita income may be a better predictor of physical activity than gross income. In order to verify this hypothesis, it will be necessary to pursue further research into the economics of physical activity. Weaknesses of this study were that the survey population was limited to Wroclaw residents, and an indirect method of assessment of physical activity was used. Therefore, further studies should increase the geographical extent to the whole of Poland and other European countries, and use other methods for studying physical activity (e.g. IPAQ in long form, pedometry or accelerometry).

REFERENCES

1) Skrzek A, Ignasiak Z, Sławińska T, et al.: Structural and functional markers of health depending on lifestyle in elderly women from Poland. Clin Interv Aging, 2015, 10: 781–792. [Medline]
2) Murano I, Asakawa Y, Mizukami M, et al.: Factors increasing physical activity levels in diabetes mellitus: a survey of patients after an inpatient diabetes education program. J Phys Ther Sci, 2014, 26: 695–699. [Medline] [CrossRef]
3) Mynarski W, Cholewa J, Rozpara M, et al.: Recommendations for health-enhancing physical activities in type 2 diabetes patients. J Phys Ther Sci, 2015, 27: 2419–2422. [Medline] [CrossRef]
4) Puciato D, Rozpara M, Mynarski W, et al.: [Physical activity of adult residents of Katowice and selected determinants of their occupational status and socio-economic characteristics]. Med Pr, 2013, 64: 649–657. [Medline]
5) Biernat E: Factors increasing the risk of inactivity among administrative, technical, and manual workers in Warszawa public institutions. Int J Occup Med Environ Health, 2015, 28: 283–294. [Medline]
6) Puciato D: Physical activity among working age residents of Wroclaw in the light of their educational attainment. J Phys Ther Sci, 2016, 28: 351–354. [Medline] [CrossRef]
7) Hoebel J, Finger JD, Kantz B, et al.: [Socioeconomic differences in physical activity in the middle-aged working population: the role of education, occupation, and income]. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz, 2016, 59: 188–196. [Medline] [CrossRef]
8) Andersen L, Gustaf J, Becker AB: The relationship between the social environment and lifestyle-related physical activity in a low-income African American inner-city southern neighborhood. J Community Health, 2015, 40: 967–974. [Medline] [CrossRef]
9) Puciato D: Socio-economic conditions of physical activity of manual workers from Wroclaw. Appl Econ Lett, 2016, 23: 831–834.
10) International Physical Activity Questionnaires: http://ipaq.ki.se/ipaq.htm (Accessed Feb. 10, 2016)
11) Global recommendations on physical activity for health: http://euro.who.int/en/home (Accessed Feb. 10, 2016)