

LEVEL OF PHYSICAL ACTIVITY AMONG PERSONS FROM INDEPENDENT CULTURAL CENTERS ACCORDING TO THE IPAQ CLASSIFICATION

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Abstract In times of prevailing civilization diseases physical activity has become not only a vital element of a healthy lifestyle but also a duty of every human being. Subsequently published studies present the levels of physical activity in various socio-professional groups and the degree to which they meet health promotion recommendations. The challenge of today's times however is the search for new, often atypical or niche social groups and their efforts in undertaking and promoting physical activity. Such a type of group undoubtedly includes persons in the Independent Cultural Centers (ICCs) operating in Poland. The research conducted among them is probably the first attempt to get to know this social group and, above all, the physical activity undertaken by its members. Accordingly, the following work presents the level of physical activity of people from ICCs using, as a research method, the International Physical Activity Questionnaire (IPAQ) in its short version. Despite the fact that the activities of Independent Cultural Centers are organized in a bottom-up manner, in accordance with the Do It Yourself principle, their initiatives, including those related to physical culture, enable participants to achieve beneficial health outcomes. The results of the conducted research show that, following the International Physical Activity Questionnaire (IPAQ) criteria, a vast majority of the respondents are sufficiently and highly active. Only 3.8% of the respondents showed an insufficient level of physical activity according to the IPAQ criteria. Moreover, compared to similar groups in other respects, they also come out more favorably.

Key words physical activity, Independent Cultural Centers, IPAQ

Introduction

Non-communicable diseases (NCDs) are currently a major threat to human health. It is estimated that preventive measures could significantly reduce premature deaths caused by NCDs, even by 80 percent (Abdellatif, Souad, 2020; Malhamé, Pilote, Destiné, Israel, Oettingen, 2019; Geidl, Abu-Omar, Weege, Messing, Pfeifer, 2020; Sarmiento et al., 2020; Salman, Tolma, Chun, Sigodo, Al-Hunayan, 2020). Accordingly, regular physical activity, referred to as a pro-health factor, plays a key role in human life (Malm, Jakobsson, Isaksson, 2019; Warburton,

Bredin, 2019; Vert et al., 2019). The significance of physical activity in the context of health has been emphasized for many years by the World Health Organization (WHO), which claims that our health is determined by lifestyle and related to it physical activity in 50% (Bergier, 2012). As the authors of numerous research studies emphasise, the lack of physical activity is the main cause of many diseases and deaths (Rector, Thyfault, 2011; Jodkowska, Tabak, Oblacińska, Stelmach, 2013, Kruk, 2014). Therefore, the fight against a sedentary lifestyle and the promotion of physical activity are becoming a key element in health prevention policies (White, Pettee, Yongin, Lewis, Sternfeld, 2015, Turner, Avolio, 2016, Shephard, 2017).

Much research conducted in Poland concerned physical activity of various social and occupational groups (Madejski et al., 2018; Kubińska, Pańczuk, 2019; Chuchra. Gorbaniuk, 2019; Domagała, 2019; Biernat, 2011), including elderly persons (Włodarek et al., 2012), teachers (Soroka et al., 2017), administration employees (Biernat, 2011), management staff (Nawrocka, Prończuk, Mynarski, Garbaciak, 2012), prison employees (Wojciechowski, Bergier, 2016), those in confinement (arrested and sentenced) (Kosendiak, Trzeciak, 2019) or students (Niżnikowska et al., 2019; Gajda, 2020). All these studies used both the short and long versions of the International Physical Activity Questionnaire (IPAQ). The tool allows for testing various types of efforts undertaken over subsequent 7 days and lasting nonstop for at least 10 minutes.

The huge role attributed to physical activity in health prevention poses a challenge related to the study of physical activity in new, previously unresearched social groups. The following paper aims at presenting the results of the study on physical activity in the so far untested group, i.e. persons from operating in Poland Independent Cultural Centers. Their activity often involves grass-roots initiatives in which young people undertake various types of social and cultural enterprises, including those related to physical activity (Yoga, martial arts, strength and endurance training, cycling events). The presented results concern people from four such centers located in Lublin, Wrocław, Gliwice and Warsaw.

Research material and methods

The study involved 112 persons, 104 of whom submitted correctly completed questionnaires. The latter number of the respondents was taken into account in the statistical analyses. The average height of the subjects was 177.3 cm (SD = 9.8), including 167 cm (SD = 5.3) in women and 183.2 cm (SD = 6.2) in men. The respondents' body weight was on average 69.9 kg (SD = 12.6) in women – 54.6 kg (SD = 5.1) and 78.7 kg (SD = 4.6) in men.

The study group consisted of 38 women and 66 men aged 19 to 46 and the research covered all active Independent Cultural Centers in Poland including:

- the Association for the Reanimation of Alternative Culture based in Wrocław, at Jagiellończyka 10 c/d;
- the *Krzyk* Ecological-Cultural-Freedom Association based in Gliwice, at Jana Śliwki 13;
- the *Skłotpol* Association based in Warsaw at Puławska 37;
- the *Sztukon* Association based in Lublin, Puławska 9D.

In order to determine the level of physical activity in persons working for particular Independent Cultural Centers, the International Physical Activity Questionnaire (IPAQ) in its short version was used. This tool enables obtaining information on the intensity and frequency of efforts made in the seven days preceding the study; thus a typical week of respondents, as indicated by the IPAQ.

The level of physical activity achieved by the respondents was classified following the IPAQ guidelines (Biernat, Stupnicki, Gajewski, 2007), which distinguish three categories of activity: insufficient (less than 600 MET-min/week),

sufficient (600–1,500 or 600–3,000 MET-min/week) and high (over 1,500 or 3,000 MET-min/week). Each type of physical activity was expressed in MET units min/week. by multiplying the coefficient assigned to a given activity by the number of declared days on which it was undertaken and its duration in minutes per day (Biernat, 2011).

The research was carried out directly. So as to avoid misinterpretation of individual questions and overestimation of the value of the declared efforts by the respondents, the process of filling in the questionnaires was monitored by the researcher. The supervision was aimed at explaining the specificity of the research and answering any questions and doubts concerning particular notions.

Results

Vigorous physical activity

Out of the 104 respondents tested in Independent Cultural Centers located in Poland, 93 persons declared undertaking intensive efforts in the seven days preceding the survey. As the study results showed, these occurred on average on 3.6 days of the week. An average of 44.4 minutes was spent on this type of effort per day, and 150 minutes per week. The energy expenditure in this case amounted to 3,360 MET/min. per week, and the caloric cost – 4080 kcal/week (Table 1).

Table 1. Average level and differences in vigorous physical activity indicators in members of Independent Cultural Centers

Variable	Unit of measure	n	\bar{x}	SD	Min	Max
VPA	days/week	93	3.6	1.7	1.0	7.0
	min/day	93	44.4	21.1	10.0	120.0
	min/week	93	150.8	86.1	20.0	420.0
	MET min/week	93	1,206.0	688.7	160.0	3,360.0
	kcal/week	93	1,402.7	822.1	160.0	4,080.0

n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, Min – minimum result, Max – maximum result.

VPA – vigorous physical activity (8.0 METs).

PA indicators in kcal/week calculated by the EE formula [kcal/week] = MET-min × (weight in kg/60kg) Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ) section 4.1 Continuous Variables p. 3.

A further analysis showed that the majority of the respondents declaring vigorous efforts (59.1%) undertook them on average on 3 to 5 days per week, almost one third (29%) – on 1–2 days a week, and 11.8% – on 7 days a week. The vast majority (76.3%) of these activities lasted from 30 to 60 minutes (Table 2).

Table 2. Number and percentage of the respondents in groups selected acc. to frequency and volume of vigorous physical activity

Variable	Category	Total	
		n	%
VPA	1–2 days/week	27	29.0
	3–5 days/week	55	59.1
	7–6 days/week	11	11.8
	Less than 30 minutes/day	15	16.1
	30–60 minutes/day	71	76.3
	Above 60 minutes/day	7	7.5

n – number of cases, % – percentage of respondents.

VPA – vigorous physical activity (8.0 METs).

Moderate physical activity

The analysis of moderate-intensity physical activity showed that it was performed by 90 out of 104 respondents (86.5%). The respondents declared being involved in such efforts on an average of 4.1 days per week, 54.2 minutes a day and 206.5 minutes a week. In this case, the energy expenditure was on average 3,360 METmin/week, and the caloric cost – 3,080 kcal/week (Table 3).

Table 3. Average level and differences in the indicators of moderate physical activity in members of Independent Cultural Centers

Variable	Unit of measure	N	\bar{x}	SD	Min	Max
MPA	days/week	90	4.1	2.0	1.0	7.0
	min/day	90	54.2	26.5	10.0	140.0
	min/week	90	206.5	134.1	15.0	840.0
	MET min/week	90	826.0	536.5	60.0	3,360.0
	kcal/week	90	952.5	597.8	75.0	3,080.0

n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, Min – minimum result, Max – maximum result.

MPA – moderate physical activity (4.0 METs).

PA indicators in kcal/week calculated by the EE formula [kcal/week] = MET·min × (weight in kg/60kg) Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ) section 4.1 Continuous Variables p. 3.

Almost half of the respondents (47.8%) declaring moderate intensity physical activity undertook it on 3 to 5 days per week. Most of the respondents (78.9%) spent 30–60 minutes a day on this type of activity (Table 4).

Table 4. Number and percentage of the respondents in groups selected acc. to frequency and volume of moderate physical activity

Variable	Category	Total	
		n	%
MPA	1–2 days/week	23	25.6
	3–5 days/week	43	47.8
	7–6 days/week	24	26.7
	Less than 30 minutes/day	9	10.0
	30–60 minutes/day	71	78.9
	Above 60 minutes/day	10	11.1

n – number of cases, % – percentage of respondents.

MPA – moderate physical activity (4.0 METs).

Walking

The least intensive efforts related to walking without stopping for at least 10 minutes were declared by 101 out of 104 respondents. Walks were taken on average on 6.2 days of the analyzed week, for 65.3 minutes a day and 406.6 minutes a week. The energy expenditure for this type of physical activity amounted to 4,158 METmin/week, and the caloric expenditure was 6,029.1 kcal/week (Table 5).

Table 5. Average level and differences in the indicators of physical activity in walking in members of Independent Cultural Centers

Variable	Unit of measure	n	\bar{x}	SD	Min	Max
WALKING	days/week	101	6.2	1.6	1.0	7.0
	min/day	101	65.3	35.9	10.0	180.0
	min/week	101	406.6	249.0	15.0	1,260.0
	MET min/week	101	1341.7	821.7	49.5	4,158.0
	kcal/week	101	1,562.9	1,043.9	45.4	6,029.1

n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, Min – minimum result, Max – maximum result.

LPA – low-intensity physical activity (3.3 METs).

PA indicators in kcal/week calculated by the EE formula [kcal/week] = MET-min x (weight in kg/60kg) Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ) section 4.1 Continuous Variables p. 3.

A further analysis showed that a vast majority of the respondents (78.2%) walked for a minimum of 10 minutes on 6–7 days per week. Most of the respondents (60.4%) spent 30–60 minutes on it on one day (Table 6).

Table 6. Number and percentage of persons active in ICCs in groups selected acc. to frequency and volume of low-intensity physical activity

Variable	Category	Total	
		n	%
WALKING	1–2 days/week	7	6.9
	3–5 days/week	15	14.9
	7–6 days/week	79	78.2
	Less than 30 minutes/day	8	7.9
	30–60 minutes/day	61	60.4
	Above 60 minutes/day	32	31.7

n – number of cases, % – percentage of respondents.

LPA – low-intensity physical activity (3.3 METs).

Classification of the respondents' level of physical activity according to IPAQ

According to the indications adopted in the Polish version of the IPAQ questionnaire (Biernat et al., 2007), only 3.8% of respondents from Independent Cultural Centers could be classified as persons undertaking insufficient physical activity. Over one third of the respondents (38.5%) declared efforts that put them into the category of highly active, and the remaining ones, more than half (57.7%), demonstrated a sufficient level of physical activity (Table 7).

Table 7. Level of weekly volume of physical activity in the respondents acc. to the IPAQ criteria

Variable	Category	Total	
		n	%
PAL acc. to IPAQ	Low (insufficient)	4	3.8
	Moderate (sufficient)	60	57.7
	High	40	38.5

n – number of cases, % – percentage of respondents.

PAL – according to IPAQ – physical activity level according to the IPAQ criteria.

A further analysis of the data showed that those classified as physically active most frequently undertook high-intensity efforts 3 times a week for at least 20 minutes a day (26% of respondents) and low-intensity efforts – 5 times a week for at least 30 minutes (23%) (Table 8).

Table 8. Number and percentage of the respondents with moderate and high level of weekly PA acc. to detailed IPAQ criteria

Variable	Category	Total	
		n	%
PAL acc. to IPAQ	Moderate (3 × 20 min VPA)	26	26.0
	Moderate (5 × 30 min MPA)	5	5.0
	Moderate (5 × 30 min LPA)	23	23.0
	Moderate (V-LPA)	6	6.0
	Vigorous (3 × VPA, 1,500 MET min/week) (CRITERION I IPAQ)	23	23.0
	CRITERION	17	17.0

n – number of cases,% – percentage of respondents

PAL according to IPAQ – physical activity level according to IPAQ criteria

In the case of the respondents classified as highly physically active, 23% reported undertaking vigorous efforts on 3 or more days per week, the energy expenditure of which was at least 1,500 METmin/week, while 17% declared doing various types of physical activity (vigorous, moderate or walking), more than 3,000 METmin/week (Table 8).

Results and discussion

The respondents from Independent Cultural Centers come out as persons pursuing grassroots initiatives that have a real impact on the development of an active as well as healthy lifestyle. Accordingly, it seems beneficial to monitor and research similar social groups and their initiatives. Self-decision on the types of physical activity and other initiatives undertaken within the ICCs allow their members freedom in pursuing individually selected forms of activity.

As the conducted analyses indicate, only 3.8% of the respondents showed an insufficient, according to the IPAQ criteria, amount of physical activity. The results obtained by the respondents of ICCs compared favorably against the results of individual levels of physical activity undertaken in similar atypical research groups, for example, employees promoting health in Zagłębie Dąbrowskie. In the case of the former, the declared participation in moderate efforts covered on average 206.5 minutes per week, and in high-intensity efforts 150 minutes a week. In the case of the latter group, the values amounted to 138 and 102 minutes per week respectively (Dębska, Mynarski, Biernat, Nawrocka, Bergier, 2019).

The comparison also showed more favorable results for the ICCs respondents when confronted with the data derived from selected occupational groups from Warsaw (Biernat, 2011), the majority of whom declared less frequent participation in physical activity compared to the ICCs respondents, who also showed better results in the analyses concerning weekly energy expenditure. They obtained the value of 3,157 METmin/week, which was over 514 units higher with regard to the tested inhabitants of Warsaw (Biernat, 2011).

Accordingly, it may be said that the results obtained by the tested respondents show that physical activity promoted by such niche groups as employees of Independent Cultural Centers can bring beneficial results for people actively pursuing it. Therefore, there is a need for further research and monitoring of this type of unconventional initiatives, which may become an opportunity for promoting an active lifestyle among young people and an effective way of disease prevention.

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Cite this article as: Bergier, M., Bergier, B. (2021). Level of physical activity among persons from Independent Cultural Centers according to the IPAQ classification. *Central European Journal of Sport Sciences and Medicine*, 4 (36), 37–44. DOI: 10.18276/cej.2021.4-04.