

PHYSICAL ACTIVITY AND THE AGE OF RESPONDENTS FROM INDEPENDENT CULTURAL CENTERS IN POLAND

AKTYWNOŚĆ FIZYCZNA A WIEK RESPONDENTÓW Z NIEZALEŻNYCH CENTRÓW KULTURY FUNKCJONUJĄCYCH NA TERENIE POLSKI

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Authors' contribution
Wkład autorów:
A. Study design/planning
zaplanowanie badań
B. Data collection/entry
zebranie danych
C. Data analysis/statistics
dane – analiza i statystyki
D. Data interpretation
interpretacja danych
E. Preparation of manuscript
przygotowanie artykułu
F. Literature analysis/search
wyszukiwanie i analiza literatury
G. Funds collection
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Summary

Background. The purpose of the following research is to present the physical activity of a niche group – people from Independent Cultural Centers (ICCs) – and to show the relationship between physical activity and the age of the respondents.

Material and methods. The study group consisted of people between the ages of 19 and 46 who were active in associations that form ICCs in Poland (in Warsaw, Lublin, Gliwice, and Wrocław). The International Physical Activity Questionnaire short form (IPAQ-SF) was used to identify the level of physical activity. In order to show the differences between the physical activity of older and younger respondents, they were divided into two groups: 1st group ≤ 30 years, 2nd group ≥ 31 years. **Results.** The analyses showed that the age of the respondents has an impact on the physical activity undertaken. More favorable, statistically significant results in analyses of vigorous physical activity (VPA) and moderate physical activity (MPA) were obtained by the younger group.

Conclusions. Participation in physical activity declines with age. There is a need to create an offer that encourages leisure-time physical activity that is attractive to older groups. Despite the more favorable analysis results of the younger group's declared physical activity, the results of the older respondents compare favorably to the groups in the studies conducted by other authors. This may indicate that the offer prepared by the associations that make up ICCs is adequately adapted to the needs of the respondents.

Keywords: Independent Cultural Centers, IPAQ, physical activity, age

Streszczenie

Wprowadzenie. Celem poniższych badań jest przedstawienie aktywności fizycznej grupy niszowej – osób z Niezależnych Centrów Kultury oraz ukazanie związku aktywności fizycznej z wiekiem respondentów.

Material i metody. Badaną grupę stanowiły osoby w wieku od 19 do 46 lat działające w ramach stowarzyszeń tworzących Niezależne Centra Kultury (NCK) na terenie Polski (Warszawa, Lublin, Gliwice, Wrocław). W celu rozpoznania poziomu aktywności fizycznej posłużono się Międzynarodowym Kwestionariuszem Aktywności Fizycznej w wersji krótkiej (IPAQ-SF). W celu wykazania różnic pomiędzy aktywnością fizyczną respondentów starszych i młodszych, zostali oni podzieleni na dwie grupy: grupa pierwsza ≤ 30 lat, grupa druga ≥ 31 lat.

Wyniki. W wyniku przeprowadzonych analiz wykazano, że wiek respondentów ma wpływ na podejmowaną aktywność fizyczną. Korzystniejsze, istotne statystycznie wyniki w analizach wysiłków fizycznych o intensywności wysokiej (VPA) i umiarkowanej (MPA) uzyskała grupa młodsza.

Wnioski. Udział w aktywności fizycznej maleje wraz z wiekiem. Potrzebne jest stworzenie oferty zachęcającej do podejmowania aktywności fizycznej w czasie wolnym, która byłaby atrakcyjna dla grup w starszym wieku. Pomimo korzystniejszych rezultatów analiz deklarowanej aktywności fizycznej grupy młodszej, wyniki starszych respondentów są korzystniejsze w porównaniu do grup z badań innych autorów. Może to świadczyć o tym, że oferta przygotowana przez stowarzyszenia tworzące NCK jest odpowiednio dostosowana do potrzeb respondentów.

Słowa kluczowe: Niezależne Centra Kultury, IPAQ, aktywność fizyczna, wiek

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Introduction

Physical activity surveys have so far been conducted based on a variety of socio-professional groups and different age groups. These studies have included children and adolescents [1-3], students [4-6], and the elderly [7-8]. The great importance of physical activity for all aspects of broader health has been proven by successive studies conducted in recent years [9-15]. The negative effects of limited physical activity and the great importance of undertaking physical activity during lockdown are shown by analyses of studies related to the Covid-19 pandemic period [16-20].

One of the determinants of participation in physical activity is age. As the results of the study show, with its passage, the respondents undertake physical activity less and less frequently, which consequently results in the absence of physical activity recommended by the World Health Organization [21] for specific age groups [22-30]. Having considered the foregoing, one of the challenges of today's times is to look for active leisure offers that would appeal to the older part of the population. The paper presents the study results concerning the physical activity of a niche group of people affiliated with associations that form Independent Cultural Centers (ICCs). The specifics of this group are based on grassroot decisions on the initiatives carried out, which include those of a recreational nature (cycling games, general training, martial arts training, yoga and others). In order to illustrate potential differences in undertaking physical activity, the respondents were divided into two age groups, and the answers they gave were related to declared physical activity of vigorous, moderate and light intensity.

Material and methods

A total of 104 people participated in the study, including 38 women and 66 men between the ages of 19 and 46 (Table 1). The group's diversity is typical of nonprofit organizations. This results from the fact that group membership is volitional in nature. The criterion for selection is not age or gender, but creativity, willingness to engage in initiatives undertaken in a given ICC. All the respondents were members of associations forming the so-called Independent Cultural Centers, within which they undertake and organize socio-cultural activities, as well as recreational activities. Any actions taken by the group under study, are discussed by them together at weekly meetings of the collective. The respondents represent Centers from Warsaw, Lublin, Gliwice and Wrocław, Poland. Due to the niche nature of the group, an attempt was made to survey all ICC members. This was greatly facilitated by the weekly meetings held within each Center. The research, the results of which are presented in this paper, was carried out during one of such gatherings.

In order to recognize the presumed relationship between physical activity and the age of the respondents, as well as due to the wide age range of the respondents, they were divided into dichotomous groups. The first group consisted of those aged 19 to 30 (54.8% of the respondents), the second group of those aged 31-46 (45.2% of the respondents) (Table 2). The physical activity level of the subjects was identified using the International Physical Activity Questionnaire (IPAQ-SF), supplemented with questions concerning personal data. Vigorous physical activity (VPA), moderate physical activity (MPA) and light physical activity (LPA) were identified using this tool. The analyzed period covered the last seven (typical) days preceding the survey. The final result of the self-assessment of weekly physical activity volume was expressed in units of METmin/week. They were calculated by multiplying the coefficient assigned to an activity by the number of days it was performed during the analyzed seven days preceding the survey, and the duration expressed in minutes [24].

Table 1. Age of the respondents

Variable	Group	n	\bar{x}	SD	Min	Max
Age	Total	104	29.0	5.3	19.0	46.0
	Women	38	26.5	4.7	21.0	45.0
	Men	66	30.5	5.2	19.0	46.0

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

Table 2. Number and percentage of the respondents in groups distinguished by age

Variable	Category	Total		Women		Men	
		n	%	n	%	n	%
Age	≤ 30 years	57	54.8	32	84.2	25	37.9
	≥ 31 years	47	45.2	6	15.8	41	62.1

Notes: n – number of cases, % – percentage of the respondents.

The most useful non-parametric statistical methods were used to analyze the level of physical activity. The significance of differences between the study variables for independent samples was determined by the Mann-Whitney U test, which is equivalent to the classic Student's t-test for unrelated samples. The distributions of the variable ($k > 2$) in the populations were tested using the Kruskal-Wallis rank-sum statistical test. This test does not assume normality of distributions. It is considered a non-parametric alternative to one-way analysis of variance between groups.

Results

Analysis of the results showed that the age of the subjects is related to their declared participation in physical activity. The younger group of respondents scored more favorably in analyses of VPA and MPA. Significant statistical variation was shown in the frequency of taking VPA, wherein the younger group participated in VPA on 4 days and the older group on 3 days of the week. On a daily basis, the younger respondents took VPA for a shorter period of time compared to the older respondents. The results averaged 43 and 46.1 minutes per day, respectively. More favorable results in the younger group were also shown when analyzing the time spent on VPA per week, with 154.2 versus 146.5 minutes per week, respectively. Analyses of the weekly energy cost of physical activity also showed a more favorable outcome for the younger respondents (1233.7 METmin/week), compared to the older group (1172.4 METmin/week) (Table 3).

Table 3. Variation in the level of vigorous physical activity in the groups of people divided by the age of the subjects (1st group ≤ 30 years, 2nd group ≥ 31 years)

Variable	Group	N	\bar{x}	SD	ΣR	U	p
VPA [days/week]	1	51	4.0	1.8	2653.5	814.5	0.048
	2	42	3.2	1.6	1717.5		
VPA [min/day]	1	51	43.0	24.1	2210.5	884.5	0.151
	2	42	46.1	17.0	2160.5		
VPA [min/week]	1	51	154.2	87.3	2428.0	1040.0	0.814
	2	42	146.5	85.5	1943.0		
VPA [METmin/week]	1	51	1233.7	698.5	2428.0	1040.0	0.814
	2	42	1172.4	683.7	1943.0		

Notes: n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, ΣR – sum of ranks, U – Mann-Whitney test value, p – test probability level for U, VPA – vigorous physical activity (8.0 METs).

For MPA, the younger respondents scored more favorably than the older group in frequency of undertaking, volume, and energy expenditure. A statistically significant difference ($p=0.019$) in their favor was shown in the frequency of moderate efforts, which they undertook on 4 days of the week ($SD=2.1$) compared to the older group on 3 days of the week ($SD=1.9$). A statistically significant difference ($p=0.019$) in favor of the younger group was noted in the frequency of MPA declared on 4 days of the week ($SD=2.1$), whereas the older group declared 3 days of the week ($SD=1.9$). A statistically significant difference in favor of the younger respondents ($p=0.032$), was shown in analyses of declarations of time spent on MPA during the week. They declared an average of 233 minutes ($SD=143.3$), compared to 177 minutes ($SD=118.3$) in the older group. Furthermore, analyses of weekly energy expenditure showed a statistically significant difference ($p=0.032$) in favor of the subjects in the younger group. They achieved a score of 931.9 METmin/week ($SD=573$), while the older group had 710.2 METmin/week ($SD=473.3$) (Table 4).

Table 4. Variation in the level of moderate physical activity in groups of people divided by age (1st group ≤ 30 years, 2nd group ≥ 31 years)

Variable	Group	n	\bar{x}	SD	$\sum R$	U	p
MPA [days/week]	1	47	4.6	2.1	2430.5	718.5	0.019
	2	43	3.5	1.9	1664.5		
MPA [min/day]	1	47	55.3	26.6	2152.0	997.0	0.916
	2	43	52.9	26.6	1943.0		
MPA [min/week]	1	47	233.0	143.3	2405.0	744.0	0.032
	2	43	177.6	118.3	1690.0		
MPA [METmin/week]	1	47	931.9	573.0	2405.0	744.0	0.032
	2	43	710.2	473.3	1690.0		

Notes: n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, $\sum R$ – sum of ranks, U – Mann-Whitney test value, p – test probability level for U, MPA – moderate physical activity (4.0 METs).

In most cases, the analyses of LPA results also showed more favorable results for the younger group. Older respondents, showed more favorable results on average only in daily LPA volume. Older respondents reported engaging in LPA for an average of 66.3 minutes per day, while younger respondents reported 64.6 minutes. In contrast, those under 30 years of age claimed to take LPA for an average of 409.7 minutes per week, while the older group claimed 402.5 minutes. The results of weekly energy expenditure on LPA averaged 1352.1 METmin/week in the younger group and 1328.3 METmin/week in the older group. Nevertheless, none of the analyses for LPA showed variation that could be considered statistically significant (Table 5).

Table 5. Variation in the level of light physical activity in groups of people divided by age (1st group ≤ 30 years, 2nd group ≥ 31 years)

Variable	Group	n	\bar{x}	SD	$\sum R$	U	p
LPA [days/week]	1	57	6.3	1.5	3045.0	1116.0	0.346
	2	44	6.0	1.8	2106.0		
LPA [min/day]	1	57	64.6	36.9	2838.0	1185.0	0.639
	2	44	66.3	35.0	2313.0		
LPA [min/week]	1	57	409.7	242.3	2926.0	1235.0	0.899
	2	44	402.5	260.2	2225.0		
LPA [METmin/week]	1	57	1352.1	799.6	2926.0	1235.0	0.899
	2	44	1328.3	858.7	2225.0		

Notes: n – number of cases, \bar{x} – arithmetic mean, SD – standard deviation, $\sum R$ – sum of ranks, U – Mann-Whitney test value, p – test probability level for U, LPA – light physical activity (3.3 METs).

Discussion

The niche group constituted by Independent Cultural Centers is an example of grassroots initiatives related to physical activity, among other things. Respondents, failing to find suitable places to undertake physical activity, organize them on their own. Respondents making joint decisions, act based on their needs, as well as the needs of their environment. Discussions held at weekly meetings resulted in, among other things, the establishment of self-defense training, general development training, yoga, bicycle meetings and tours, as well as others. The selected activities are undertaken by the respondents within the ICCs, which allows us to conclude that physical activity initiatives implemented within the ICCs have a direct effect on the physical activity of those who organize them. The fact that the activities conducted by the respondents does not constitute their source of income is also noteworthy. These classes are free of charge, and what is very important for health – they are held in the form of regular meetings and workouts. Studies have shown that younger people are more likely to engage in both vigorous, moderate and light physical activity. This fact should be particularly emphasized in the case of VPA as well as MPA, where the data analyses conducted showed statistically significant results in favor of the younger respondents. This type of relationship between physical activity and the age of the subjects is confirmed by the results of numerous publications appearing in recent years [22-30]. A conclusion from this type of research that can be applied is the need to create offers for active leisure time aimed at older groups of people.

With regard to the study group, it is important to note the results of the weekly energy cost of total physical activity, which was 3224 METmin/week in the younger group (19-30 years) and 3071 METmin/week in the older group (31-49 years). This fact can be argued to show that niche groups such as ICCs are able to offer leisure activities that reduce the unfavorable disparities in the physical activity undertaken by older and younger people. Perhaps the niche nature of the ICC, as well as the collective decision-making (in grassroots manner) on various activities and initiatives, including those related to physical activity, makes the activities of the associations surveyed more thoughtful and tailored to the needs of the people involved. Joint organization of training, as well as various recreational and sports events, can make the younger group motivate the older group to participate in events together. Older people are likely to feel more confident when participating in physical activities undertaken together with younger, close participants. The foregoing ideas can be confirmed by the results of a study conducted among people between the ages of 20 and 50 [23], which showed significantly lower values of weekly physical activity volume parameters compared to responders from ICCs. The respondents' declared physical activity was also compared with the results of a survey of people from a health promotion association in the Dąbrowa Basin, Poland. This group claimed to undertake moderate-intensity physical activity for 138 minutes per week, while high-intensity efforts for 102 minutes per week [31]. Again, more favorable results were seen in those from ICCs.

Conclusions

1. Undertaking physical activity is related to the age of the respondents. There is a decline observed in the respondents from the older group (31-46).
2. People from ICCs showed favorable levels of physical activity compared to other socio-occupational groups.
3. There is a need for further research conducted in ICCs, enabling a more thorough understanding of the types and forms of physical activity undertaken and its promotion. In order to do this, physical activity surveys need to be conducted using an objective physical activity assessment tool, combined with an ongoing physical activity diary.

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