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Gardening as the dominant leisure time physical activity (LTPA) of older adults from a post-communist country. The results of the population-based PolSenior Project from Poland

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ABSTRACT

Objective: To describe the LTPA of older Polish citizens in the nationwide, representative population-based PolSenior Project.
Methods: A study group comprising 4813 randomly recruited participants aged 65 and over was surveyed. Data concerning LTPA in relation to age, gender, place of residence, and social class have been reported.
Results: Only 33.6% fulfilled the recommended LTPA criteria. Gardening (64.6%), walking (39.0%) and cycling (37.3%) were the most popular physical activities, followed by gymnastic exercises (18.2%) and dancing (12.8%). Village residents reported walking, gymnastics, swimming, tennis and dancing (32.5%, 9.1%, 1.8%, 0.1%, 8.1%) less frequently than those who live in cities, especially as compared to the residents of the largest cities (45.2%, 28.3%, 13.4%, 1.3%, 15.7%, respectively). However, the frequency of cycling generally decreased with the size of the place of residence. Village residents reported cycling and gardening more frequently (49.2% and 75.8%) than residents of the largest cities (20.6% and 45.8%, respectively).
Conclusion: There are several differences in the LTPA of older adults in Poland compared with those in North America or Western Europe. Community-based and environmental policies should concentrate on a combination of sustaining existing favorable physical activity (PA) habits (gardening and cycling), and developing access and motivation for participation in LTPA characteristic of developed countries.

1. Introduction

Lifestyle determines human health throughout the whole lifespan, and one of the important aspects of lifestyle is free time behavior (Pac, Tobiasz-Adamczyk, Brzyska, & Florek, 2013). People with active, healthy lifestyles who do regular PA can count on multiple benefits. Health benefits of regular PA have been recognized as particularly important in the older population (American College of Sports Medicine, 1998). Healthy lifestyle in old age has been associated with delayed deterioration of health status and reduced risk of mortality (de Groot et al., 2004). Elderly people who engage in regular exercise have been found to demonstrate an increased ability to perform daily activities and maintain mobility (Taylor et al., 2004). In addition, regular PA improves mood and mental well-being, reduces the risk of cognitive impairment, dementia, and Alzheimer's disease (Kostka & Bogus, 2007; Rovio et al., 2005). Adverse effects are observed for people not involved in regular PA. The rate of decline of physical fitness with age is higher for people leading a sedentary lifestyle; this value being about 10% per decade of life, compared to 5% per decade in the case of very physically active people (Stathokostas, Jacob-Johnson, Petrella, & Paterson, 2004).

Improving and maintaining a physically active lifestyle in a growing elderly population is a great challenge for developed countries (de Groot et al., 2004; Rydwik et al., 2013). The elderly constitute the fastest growing segment of the population of the former communist countries from Central and Eastern Europe (Borowiak & Kostka, 2013). Though political and social transition in Central and Eastern Europe has been generally associated with an

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increased life expectancy, an important East-West health gap is still apparent (Drygas et al., 2009; Vogt, 2013). In a 10-year follow-up to the SENECA Study, elderly men living in Eastern Europe, represented by the Polish center, were found to have greater mortality than those in southern or northern Europe (Amorim-Cruz, Haveman-Nies, Schlettwein-Gsell, & De Henauw, 2002). Life expectancy across Europe as a whole can be tackled by intervention programs addressing the lifestyle and socio-economic factors responsible for these regional differences in mortality (Amorim-Cruz et al., 2002).

There is a paucity of data in available literature regarding the comprehensive lifestyle behaviors of different older populations. Especially, there are no in-depth studies assessing elderly from former communist countries. Therefore, the aim of the present study was to describe the LTPA of Polish citizens aged 65 years and over in the representative population-based PolSenior Project.

2. Methods

2.1. Program description

The PolSenior Project is a multicenter, publicly funded research project commissioned by the Ministry of Science and Higher Education. Detailed methodology of the project has been previously described (Bledowski et al., 2011). In brief, it is the largest scientific research program focused on elderly subjects performed in Poland to date, involving 40 research groups, and lasting for a period of 54 months (from October 2007 to April 2012). Interviewers were recruited among professionally active nurses who worked mostly within local communities. All nurses participating in the study underwent training for the purpose of the PolSenior Project. The fieldwork consisted of three nurse home visits. The socioeconomic part of the questionnaire was completed during the second visit (Bledowski et al., 2011). The PolSenior Project was approved by the Bioethics Commission of the Medical University of Silesia in Katowice. Before enrolling in the study, a respondent or the caregiver signed an informed consent form (Bledowski et al., 2011).

2.2. Subjects

The planned size of the research sample was 5950 elderly respondents, divided into six age groups of equal size (65–69 years, 70–74 years, 75–79 years, 80–84 years, 85–89 years, and 90+ years), with one additional reference group consisting of subjects who were just about to enter old age (55–59 years old). Research participants were randomly recruited in bundles, in a stratified, proportional draw performed in three stages as previously described (Bledowski et al., 2011). In the present study 4813 participants (2488 men and 2325 women) aged 65 and over were included.

2.3. Questionnaire

The socioeconomic part of the questionnaire included questions concerning the personal and family situation, economic status, household structure, leisure activities, hobbies, and social life. In the present study, we report the data on PA of elderly Polish citizens in relation to age, gender, size of the place of residence and social class according to employment categories. Respondents were placed in occupational groups based on following question: Please tell me which employment category you belonged to for the longest period in your life? The four answer categories were as follows: Farmer employee a – person working as farmer or as a farmhand at a privately-owned farm. Blue-collar employee – a person working as a skilled physical laborer (hired labor), craftsman or unskilled physical laborer other than farming. White-collar employee – a person working in a managerial position, or in an independent/specialist position (doctor, teacher, lawyer, etc.). Other employee – a person working as a shop assistant, salesperson, owner of a trade workshop or service workshop, a small entrepreneur, in the army, the police, or other uniformed services (Bledowski et al., 2011).

In PA part of the survey respondents answered the question: "In the past 12 months have you engaged in the following activities?" Those who responded "yes" answered the second question: "How often do you usually spend your time in this way? Please consider the period of the past 12 months." Possible answers included: once a year, several times a year, once or twice a month, once a week, several times a week, every day, hard to say. All physical activities included in the questionnaire were classified as moderate or vigorous (Ainsworth et al., 1993; Garber et al., 2011). Moderate-intensity activities included in the questionnaire were as follows: (1) walks farther from home or the place of accommodation; (2) gymnastic exercise, aerobics, etc.; (3) riding a bicycle; (4) sailing; (5) gardening. Vigorous-intensity activities included in the questionnaire were as follows: (1) running or jogging; (2) swimming; (3) team games (volleyball, basketball, football, etc.); (4) sailing; (5) horse riding; (6) tennis; (7) table tennis; and (8) dancing.

PA data was reviewed to determine whether the respondents fulfill the recommendations of the American College of Sports Medicine (ACSM) on cardiorespiratory exercise training (Garber et al., 2011). Exercise recommendations can be met through 30–60 min of light- to moderate-intensity exercise on $\geq$5 days per week or 20–60 min of vigorous-intensity exercise on $\geq$3 days per week or a combination of moderate and vigorous exercise. In this study, the ACSM recommendations were considered met if the respondents had engaged in any of the following: any type of PA daily, any vigorous-intensity exercise several times a week, any two forms of moderate-intensity exercise several times a week, any three forms of vigorous-intensity exercise once a week, any five forms of moderate-intensity exercise once a week, or a combination of moderate and vigorous exercise (one session of vigorous-intensity exercise was considered to be equivalent to two sessions of moderate-intensity exercise).

2.4. Statistical analysis

Because the study analyzed equivalent stratums of age groups, the sample did not reflect the structure of the elderly population (65 and over). Therefore, for epidemiological analyses it was necessary to calculate weight adjustments. The design factor was equal to the dwelling sampling fraction reciprocal in the h-th stratum. The stratum was defined by age, gender, and size of residence estimated for Polish population in 2009. Weights were then adjusted with the use of non-response rates estimated for each stratum separately (Bledowski et al., 2011). Chi-square test with Yates' correction for 2×2 tables was used to test the relationships between PA and age, gender, size of the place of residence, and social class according to employment categories. The level of significance was set at $p < 0.05$.

3. Results

The structure of the study sample, including age group, size of place of residence and social class according to gender is shown in Table 1.

Table 2 shows leisure time physical activities of respondents. As participation in some seasonal activities was very low (skiing – 1.6%, sailing – 0.8%, horse riding – 0.1%), these activities are not shown in the table. Gardening, walking and cycling were the most popular