

PART II. PHYSICAL ACTIVITY OF SOCIAL AND PROFESSIONAL GROUPS

Age- and sex-specific motives for physical activity in the Vojvodina region

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Authors' contribution:

- A. Study design/planning
- B. Data collection/entry
- C. Data analysis/statistics
- D. Data interpretation
- E. Preparation of manuscript
- F. Literature analysis/search
- G. Funds collection

Abstract

Background. This study examined age- and sex-specific differences in motives for physical activity among residents of the Autonomous Province of Vojvodina, Serbia. The study used the Special Eurobarometer on Sport and Physical Activity methodology, allowing comparison within a broader European context.

Material and methods. A cross-sectional survey was conducted in 2023 with 945 participants (439 men, 506 women) aged 15-94 years. Descriptive statistics, chi-square tests with Holm's correction, and Cramér's V for effect sizes across age and sex groups were used.

Results. Improving health was the most frequently reported motive across all age groups and between both sexes, consistent with the EU trends. Younger individuals more often reported appearance-, performance-, enjoyment-, competition-, self-esteem-, and skill-related motives, whereas older adults focused primarily on health, relaxation, and fitness. Women emphasized appearance and weight control more than men, while men were more motivated by enjoyment, competition, and socializing. With age, appearance- and self-esteem-related motives declined more among women, whereas performance- and competition-related motives declined more among men.

Conclusions. Motives for physical activity in Vojvodina vary significantly by age and sex, largely mirroring the EU patterns. These findings highlight the need for age- and sex-sensitive promotion strategies that reflect both European trends and local contexts.

Keywords: European Union, Vojvodina, physical activity, motivation, adults

Introduction

Regular physical activity can substantially improve the physical and mental health of people of all ages and abilities, whereas insufficient physical activity increases the risk of chronic non-communicable diseases (NCDs) (cardiovascular diseases, stroke, cancer, and diabetes), which are the leading

Tables: 3

Figures: 0

References: 26

Submitted: 2026 Feb 15

Accepted: 2026 March 5

Published Online: 2026 March 9

Vuković J, Jakšić D, Tubić T, Matić R, Maričić S, Marković L, et al. Age- and sex-specific motives for physical activity in the Vojvodina region. Health Prob Civil. 2026; 20(3): 335-348. <https://doi.org/10.29316/hpc/218911>

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causes of premature mortality. In 2020, NCDs accounted for approximately 80% of the global burden of disease [1]. Regular engagement in physical activity is associated with numerous health benefits, including longer life expectancy, healthier aging, and subjective well-being [2-4].

Among global efforts aimed at promoting physical activity, the World Health Organization's Global Action Plan on Physical Activity 2018-2030 [5] is of particular importance and preceded the adoption of the current physical activity guidelines [2]. The plan aims to reduce physical inactivity by 15% and outlines 20 recommended policy actions and interventions. The Action Plan is aligned with the United Nations 2030 Agenda for Sustainable Development [6] and promotes the vision of more active people for a healthier world, defining four key objectives: (1) creating active societies, (2) creating active environments, (3) creating active people, and (4) creating active systems.

Despite numerous efforts to address the problem of physical inactivity, the global prevalence of insufficient physical activity among adults increased from 23.4% in 2000 to 31.3% in 2022 [7]. Globally, approximately 1.8 billion people do not meet the minimum physical activity recommendations, with women and adults aged 60 years and older representing particularly vulnerable groups. Although the proportion of physically inactive adults in Serbia declined from 48.9% to 44.9% between 2000 and 2022, this trend is insufficient to achieve the planned target of a 15% reduction in inactivity by 2030 [7].

Current Eurostat data present an even less favorable picture of physical activity in Serbia, with only 11% of citizens meeting the aerobic physical activity guidelines (a minimum of 150 minutes of moderate-to-vigorous physical activity per week), which is well below the European Union average of 31.7% [8]. With regard to physical inactivity as a lifestyle risk factor, the most vulnerable groups in Serbia appear to be women, younger individuals, and those who are unmarried, less educated, and residing in the Southern and Eastern Serbia regions [9]. Pronounced regional disparities in development, with substantial differences both between and within regions [10], may further influence physical activity patterns and related motivations.

In line with the "Create active people" policy actions, which aim to "help people of all ages and abilities to engage in regular physical activity as individuals, families, and communities" [5], it is important to identify the least active population groups in each country in order to develop tailored programs and services that effectively address individuals' motives for physical activity.

Motives for physical activity among adults vary by sex, age, educational level, and other socio-demographic characteristics. Regarding sex-related differences, previous studies have indicated that men tend to be more motivated by competition [11,12] and prestige [13], as well as enjoyment, challenge, and skill development [12-14], compared with women. In contrast, women more frequently report motives related to physical appearance, health improvement, and psychological benefits [11].

Motivations can differ across the age groups, as well. The awareness of the importance of physical health increases with age [11,15], as does mental well-being [11,16]. Younger individuals more frequently report appearance, competition, and prestige as motives compared with older adults [11,13,16]. Enjoyment as a motive may decline during adolescence [13] but tends to regain importance in later adulthood [11]. The significance of affiliation motive (basic human need to connect, belong, and maintain positive social relationships, fostering companionship and cooperation) appears to decrease with age [11,13].

Reasons for engaging in physical activity differ by activity type and setting, although motivations for joining sport clubs or fitness centers may remain consistent across age, sex, and location [17]. Participation in sport clubs is primarily associated with enjoyment, social connection, and performance-

related goals, including competition and achievement. In contrast, fitness center participation is more strongly associated with physical and mental health benefits and weight management [17]. Motivations for different leisure-time physical activities can significantly vary [11]. Competition and affiliation are strong motivators for participants in team ballgames and other ballgames, and physical fitness and appearance are less important motives for individuals engaged in outdoor activities, water-based activities, street sports, etc. [11].

Both the extent and persistence of physical activity engagement may be shaped by individuals' underlying motivations for participation [18,19]. Individuals with higher activity levels scored higher on motives related to mood enhancement, solitude, social interaction, fitness, and competition compared with more sedentary individuals. Compared with non-regular exercisers, the most prominent motives for regular exercisers include enjoyment, challenge, recuperation, stress management, and social affiliation [19]. Highly active individuals, as well as those who exercise regularly, tend to rely more on self-determined motivations [18,19].

Data from the latest Eurobarometer report 2022 [20] show that the three most important reasons for engaging in physical activity among the EU citizens are improving health (54%), improving physical fitness (43%), and relaxation (39%). Compared with the 2017 Eurobarometer [21], no substantial changes in motives were observed. However, considerable variation exists between countries and socio-demographic characteristics. Sex, age, education, and economic status are significantly associated with motives for physical activity. Regarding age differences, individuals in the youngest age group (15-24 years) report the widest range of motives, with greater emphasis on fun, improved physical performance, socializing with friends, and improving physical appearance. The EU citizens aged 55 years and older more frequently report improving health and counteracting ageing as motives. Sex differences were small; compared with women, men were somewhat more motivated by fun, improved physical performance, and social interaction.

A study conducted in 2019 among residents of the Vojvodina region using the Eurobarometer methodology revealed several local specificities in the leading motives for engaging in physical activity [22]. Improving health was the dominant motive for engaging in sport or physical activity (73%), while all other motives were considerably less prevalent. Other important motives included improved physical fitness (42%), relaxation (38%), and improved physical appearance (37%). Among women, motives related to physical appearance, relaxation, and weight control were more pronounced, whereas men more frequently reported socializing with friends and fun.

The prevalence of specific motives varies significantly by age group, with health being the most important motive across all ages. The two younger age groups showed very similar motivational profiles, with health, improved physical appearance and fitness, relaxation, and improved physical abilities being the most important motives for engaging in sport and physical activity. Among participants aged 40 years and older, all motives important for younger groups, except health, were considerably less prevalent, particularly in the oldest age group (55+). With increasing age, the importance of exercising to slow down ageing increased from 5% among the youngest participants to 19% among those aged 55 years and older [22].

Understanding the factors that motivate individuals to engage in physical activity can contribute to the development of targeted physical activity promotion interventions. Previous research shows that

motives differ by socio-demographic characteristics, and studies from the Vojvodina region suggest the presence of specific local patterns.

Taken together, these findings highlight the need for further research focusing on motives for physical activity in the region of Vojvodina.

Aim of the work

The aim of the present study was to examine differences in motives for physical activity among men and women across different age groups in the Vojvodina region.

Material and methods

Participants

The study was conducted on a population-based sample from the Autonomous Province of Vojvodina, following the Eurobarometer survey methodological principles. A quota sample of the population aged 15 years and older was selected, stratified by administrative district, level of urbanization, education, and sex. Valid data were collected from 945 participants (439 men and 506 women), aged 15-94 years ($M=45.7$ years). Participants were recruited from 98 settlements across all seven administrative districts of the Autonomous Province of Vojvodina (West Bačka, South Banat, South Bačka, North Banat, North Bačka, Central Banat, and Srem). The age distribution included 20% aged 15-24 years, 15% aged 25-39 years, 24% aged 40-54 years, and 41% aged 55 years and older. The similarities and differences in physical activity patterns were examined across predefined age groups (Table 1).

Table 1. Sample characteristics according to sex and age

Characteristics		Male (%)	Female (%)	Total (%)
Age groups	15-24	91 (9.6)	96 (10.1)	187 (19.7)
	25-39	98 (10.4)	46 (4.9)	144 (15.2)
	40-54	59 (6.2)	167 (17.7)	226 (23.9)
	55 and older	191 (20.2)	197 (20.9)	388 (41.1)
Total		439 (46.4)	506 (53.6)	945 (100.0)

Notes: Data are presented as number of participants (percentage).

Study design

This study employed a cross-sectional survey design. Data collection was carried out between April and May 2023. All the participants provided written informed consent before data collection. For participants under 18, additional parental or legal guardian consent was obtained. Participants' confidentiality was maintained throughout the research process. All research data were stored securely on a password-protected server.

Methodology

The questionnaire was based on the Special Eurobarometer on Sport and Physical Activity, which has been conducted across the EU countries periodically since 2002 (2002, 2009, 2013, 2017, 2022). Using a comparable methodological framework, similar surveys were previously conducted in the Autonomous Province of Vojvodina in 2011 and 2019. The original questionnaire was translated from English into Serbian. During the translation process, the standard cross-cultural adaptation protocol was followed.

Statistical analysis

Motives for physical activity were analyzed as a multiple-response set, as participants were allowed to choose more than one motive. Each motivation item was therefore treated as a separate binary variable (yes/no). Descriptive statistics were calculated as frequencies and percentages of respondents who selected each motive within each group.

To examine differences in motivational profiles across age categories, chi-square tests of independence were performed for each motivation item separately. All analyses were conducted separately for male and female participants to avoid confounding by sex and to allow for sex-specific interpretation of age-related differences.

To control for multiple comparisons arising from the analysis of numerous motivation items, Holm's sequential correction was applied to p-values. Effect sizes were reported as Cramér's V, with higher values indicating stronger associations between age groups and the respective motivations. Statistical significance was set at $p < 0.05$ (two-tailed).

Motives selected by very few participants (i.e. fewer than approximately 15 responses or with zero counts in one or more age groups) were excluded from inferential analyses and are reported descriptively only.

All statistical analyses were conducted in the R statistical environment (version 4.5.2) using standard procedures.

Results

Descriptive analyses revealed the overall distribution of reported motives across age groups and sexes, highlighting patterns that warranted further statistical examination. The following sections detail identified motivational profiles and illustrate how priorities differ throughout the lifespan (Table 2).

Table 2. Prevalence of motives for physical activity among men by age group

Motives	Age				Total	p-value	Holm's p	V
	15-24	25-39	40-54	55 and more				
To improve health	56	57	38	116	267	0.890	1	0.038
	61.5%	58.2%	64.4%	61.1%	60.8%			
To improve physical appearance	44	38	20	15	117	<0.001	<0.001	0.385
	48.4%	38.8%	33.9%	7.9%	26.6%			
To counteract the effects of aging	1	6	11	11	29	<0.001	<0.001	0.206
	1.1%	6.1%	18.6%	5.8%	6.6%			

Motives	Age				Total	<i>p</i> -value	Holm's <i>p</i>	V
	15-24	25-39	40-54	55 and more				
To have fun	29	27	13	16	85	<0.001	<0.001	0.253
	31.9%	27.6%	22.0%	8.4%	19.4%			
To relax	27	34	18	58	137	0.871	1	0.040
	29.7%	34.7%	30.5%	30.5%	31.2%			
To be with friends	22	23	12	34	91	0.565	1	0.068
	24.2%	23.5%	20.3%	17.9%	20.7%			
To make new acquaintances	6	5	2	5	18	0.423	1	0.080
	6.6%	5.1%	3.4%	2.6%	4.1%			
To meet people from other cultures	6	2	0	0	8	0.001	0.009	0.192
	6.6%	2.0%	0.0%	0.0%	1.8%			
To improve physical performance	23	11	4	1	39	<0.001	<0.001	0.329
	25.3%	11.2%	6.8%	0.5%	8.9%			
To improve fitness	40	33	21	60	154	0.235	1	0.099
	44.0%	33.7%	35.6%	31.6%	35.1%			
To control weight	25	16	18	19	78	<0.001	<0.001	0.216
	27.5%	16.3%	30.5%	10.0%	17.8%			
To improve self-esteem	19	8	4	6	37	<0.001	<0.001	0.240
	20.9%	8.2%	6.8%	3.2%	8.4%			
To develop new skills	12	5	1	1	19	<0.001	<0.001	0.239
	13.2%	5.1%	1.7%	0.5%	4.3%			
For the spirit of competition	18	11	3	4	36	<0.001	<0.001	0.250
	19.8%	11.2%	5.1%	2.1%	8.2%			
To better integrate into society	2	0	2	0	4	0.040	0.320	0.138
	2.2%	0.0%	3.4%	0.0%	0.9%			
Other	9	11	9	40	69	0.048	0.336	0.134
	9.9%	11.2%	15.3%	21.1%	15.7%			
Don't know	2	7	6	16	31	0.197	1	0.103
	2.2%	7.1%	10.2%	8.4%	7.1%			

Notes: Values are presented as n (%). Age-related differences were tested using chi-square tests for each motive separately. *p*-value = uncorrected significance; Holm's *p* = Holm-adjusted significance for multiple comparisons; V = Cramér's V (effect size). *p*<0.05.

The analysis using Holm's sequential correction for multiple comparisons revealed that men demonstrated significant differences between their motives for physical activity across age groups, with effect sizes that ranged from moderate to large according to Cramer's V values. The strongest age-related differentiation was observed for motives related to physical appearance improvement (V=0.385) and physical performance improvement (V=0.329), both representing large effects. The study shows that younger men aged 15-24 years and 25-39 years reported these reasons at higher rates than men in other age groups. Participants' preference to appearance-related motives decreased strongly with age, reaching the lowest prevalence among men aged 55 years and older. The results showed that performance-

oriented motives followed a similar pattern, which indicated that people move toward less competitive and performance-focused physical activity involvement as they grow older.

The enjoyment and competition motives showed similar age patterns with moderate effect sizes: “to have fun” ($V=0.253$), and “for the spirit of competition” ($V=0.250$). Younger male participants displayed these motivations most strongly, particularly in comparison to the oldest group. The study indicates a lower importance of hedonic and competitive motivations in older adult compared to younger adult age groups.

The results showed that exercise motivations between different age groups followed different patterns. “Counteracting the effects of aging” ($V=0.206$) and “controlling weight” ($V=0.216$) motives demonstrated average strength of association with age since middle-aged and older men tended to agree with these statements.

The study found that psychosocial motives “to improve your self-esteem” ($V=0.240$) and “to develop new skills” ($V=0.239$) showed significant age-related changes, with younger men reporting these motives more often.

Due to low cell frequencies, the motives “to better integrate into society” and “to meet people from other cultures” were excluded from inferential analyses.

After applying Holm’s sequential correction for multiple comparisons, several motives for physical activity exhibited statistically significant differences across age groups among women, with effect sizes ranging from small to large, as indicated by Cramer’s V values (Table 3).

Table 3. Prevalence of motives for physical activity among women by age group

Motives	Age				Total	p -value	Holm’s p	V
	15-24	25-39	40-54	55 and more				
To improve health	65 67.7%	31 67.4%	109 65.3%	117 59.4%	322 63.6%	0.441	0.960	0.073
To improve physical appearance	58 60.4%	27 58.7%	69 41.3%	26 13.2%	180 35.6%	<0.001	<0.001	0.403
To counteract the effects of aging	4 4.2%	4 8.7%	20 12.0%	14 7.1%	42 8.3%	0.139	0.695	0.104
To have fun	29 30.2%	8 17.4%	18 10.8%	11 5.6%	66 13.0%	<0.001	<0.001	0.267
To relax	32 33.3%	21 45.7%	60 35.9%	58 29.4%	171 33.8%	0.179	0.716	0.099
To be with friends	27 28.1%	6 13.0%	18 10.8%	29 14.7%	80 15.8%	0.002	0.018	0.170
To make new acquaintances	11 11.5%	1 2.2%	2 1.2%	4 2.0%	18 3.6%	<0.001	<0.001	0.208
To meet people from other cultures	6 6.2%	0 0.0%	4 2.4%	0 0.0%	10 2.0%	0.003	0.021	0.167
To improve physical performance	13 13.5%	3 6.5%	3 1.8%	5 2.5%	24 4.7%	<0.001	<0.001	0.209
To improve fitness	48 50.0%	22 47.8%	42 25.1%	59 29.9%	171 33.8%	<0.001	<0.001	0.210

Motives	Age				Total	<i>p</i> -value	Holm's <i>p</i>	V
	15-24	25-39	40-54	55 and more				
To control weight	29 30.2%	16 34.8%	41 24.6%	29 14.7%	115 22.7%	0.002	0.018	0.169
To improve self-esteem	29 30.2%	11 23.9%	4 2.4%	6 3.0%	50 9.9%	<0.001	<0.001	0.387
To develop new skills	12 12.5%	3 6.5%	4 2.4%	0 0.0%	19 3.8%	<0.001	<0.001	0.243
For the spirit of competition	11 11.5%	1 2.2%	3 1.8%	3 1.5%	18 3.6%	<0.001	<0.001	0.207
To better integrate into society	2 2.1%	1 2.2%	0 0.0%	2 1.0%	5 1.0%	0.320	0.960	0.083
Other	5 5.2%	3 6.5%	20 12.0%	36 18.3%	64 12.6%	0.007	0.042	0.155
Don't know	5 5.2%	4 8.7%	11 6.6%	21 10.7%	41 8.1%	0.341	0.682	0.081

Notes. Values are presented as n (%). Age-related differences were tested using chi-square tests for each motive separately. *p*-value = uncorrected significance; Holm's *p* = Holm-adjusted significance for multiple comparisons; V = Cramér's V (effect size). *p*<0.05.

The strongest age-related difference was observed for motives related to “physical appearance improvement” (V=0.403) and “self-esteem improvement” (V=0.387), both representing large effect sizes. These motives were most prevalent among younger women, particularly those aged 15-24 and 25-39 years, and declined sharply with increasing age. Notably, the prevalence of appearance-related motives decreased from over 60% in the youngest age group to approximately 13% among women aged 55 years and older, indicating a pronounced shift in motivational priorities across the lifespan.

Motives associated with enjoyment and social engagement also demonstrated significant age-related differences. The motive “to have fun” showed a moderate effect size (V=0.267), with a clear decline from younger to older age groups. Similarly, the motives “to be with friends” (V=0.170) and “to make new acquaintances” (V=0.208) were more frequently reported by younger women, suggesting that social and intrinsic motives play a greater role in early adulthood and diminish in later life stages.

Performance- and competition-related motives followed comparable patterns. Motives such as “to improve physical performance” (V=0.209), “for the spirit of competition” (V=0.207), and “to develop new skills” (V=0.243) showed statistically significant age differences with moderate effect sizes. These motives were predominantly reported by younger women, and their prevalence decreased with age, reflecting a reduced emphasis on competitive achievement and skill acquisition in later adulthood.

Health- and body-related motives displayed more nuanced patterns. “Fitness improvement” (V=0.210) and “weight control” (V=0.169) motives were significantly associated with age, with the prevalence remaining relatively high across age groups, particularly in early and middle adulthood. In contrast, motives such as “to improve your health” and “to relax” did not retain statistical significance after Holm's correction, and their effect sizes were small, indicating a relative stability of these motives across age categories.

Finally, several motives were excluded from inferential interpretation due to low cell frequencies, including “to better integrate into society” and “don’t know”, as these did not meet the assumptions required for reliable chi-square testing.

Discussion

The present study examined age- and sex-related differences in motives for engaging in physical activity among residents of the Autonomous Province of Vojvodina using a methodology aligned with the Special Eurobarometer on Sport and Physical Activity. A large population-based sample spanning adolescence to older adulthood allowed for a detailed analysis of motivational patterns across the life course. By analyzing motives as multiple-response items and stratifying analyses by sex and age groups, the study provides a nuanced picture of how motivational priorities for physical activity evolve and how they differ between men and women within a specific regional and socio-cultural context.

Considering the context, the Vojvodina region (NUTS2 level), located in the southern part of the Pannonian Plain, is the second most developed region in the Republic of Serbia after the Belgrade region [10]. Vojvodina accounts for 26.4% of Serbia’s GDP and has a population of approximately 1.7 million (26.2% of the country’s total population). According to the National Statistics Office [23], the average age of the population is 43.6 years. Vojvodina is experiencing both a population decline and increased aging. Life expectancy is 71.99 years for males and 77.46 years for females. Health indicators reveal that 52% of the population have at least one chronic disease, and 25% are obese. The leading causes of death are cardiovascular diseases (49%) and cancer (22%).

Consistent with global and European evidence emphasizing the central role of health in motivation for physical activity [20], improving health emerged as the most frequently reported motive across all age groups and both sexes in the present study. This finding aligns closely with Eurobarometer data indicating that health improvement is the leading reason for engaging in physical activity among the EU citizens, regardless of demographic characteristics. The relative stability of health-related motives across age groups observed in our study further supports previous findings suggesting that health constitutes a universal and enduring motivator throughout adulthood [11,15,16].

In contrast, several motives exhibited pronounced age-related variation, particularly those associated with physical appearance, physical performance, enjoyment, competition, and making new acquaintances. Among men, motives related to improving physical appearance and physical performance showed the strongest age-related differentiation, with large effect sizes. Younger men reported these motives substantially more often than older men. The same pattern was identified considering fun and being with friends as motives for physical activity. Our findings closely mirror the EU-level findings, indicating that younger adults emphasize appearance, fun, and performance more strongly than older age groups [20]. Similar trends have been documented in earlier studies highlighting the importance of mastery, competition, and enjoyment among younger people [11,13].

Among women, age-related differences in motivation were even more pronounced for specific domains. Motives related to improving physical appearance and self-esteem demonstrated large effect sizes and showed a sharp decline with age. These findings align with the EU data, indicating that younger women place greater emphasis on appearance, body image, and self-perception, whereas these concerns become less salient in later life stages [20]. The marked decrease in appearance-related motives among

women aged 55 years and older suggests a substantial shift in motivational priorities, potentially reflecting changes in societal expectations, body image concerns, and health perceptions across the lifespan.

Findings from the two most recent Eurobarometer surveys [20,21] indicate that women across Europe were more likely than men to report appearance-related, weight-control, and relaxation motives. In contrast, men more frequently emphasized social interaction, enjoyment, and competition. A similar pattern is evident in the Vojvodina sample, where women consistently placed greater importance on motives related to physical appearance, weight regulation, and relaxation across age groups, while men more often cited fun and socializing with friends as reasons for engaging in physical activity.

In comparison with their EU peers, both males and females in the Vojvodina region more frequently reported health and physical appearance improvement as important reasons for engaging in physical activity, whereas the EU citizens, regardless of sex, placed greater emphasis on enjoyment, relaxation, physical performance and fitness improvement, and counteracting the effects of aging [8].

The age-related differences observed in our study are consistent with trends reported in recent Eurobarometer surveys [20,21]. Previous data indicate that younger respondents, particularly those aged 15-24 and 25-39 years, are more strongly motivated by physical appearance, enjoyment, competition, and social interaction, whereas these motives decline markedly with age. This pattern was replicated in the present findings, with sharp decreases in appearance-, performance-, and enjoyment-related motives among participants aged 40 years and older, especially among those aged 55 years and above.

Notably, the sex-by-age interaction observed in the present study is consistent with previously reported European-level trends [20,21]. The EU data suggest that sex differences in motivation are most pronounced in younger age groups and tend to converge in later adulthood. The Vojvodina data strongly support this observation, showing substantial sex differences among younger women and men for appearance-, weight-control-, and relaxation-related motives. In contrast, differences become less prominent in older age categories.

Finally, the increasing relevance of health improvement and counteracting the effects of aging among older adults identified in the Eurobarometer findings [20,21] was not fully reflected in our study. In contrast, health motivation remained relatively stable across age groups, while the motive of mitigating aging was most pronounced among middle-aged participants (40-54 years) in both sexes. Previous studies have also indicated that the importance of health improvement increases with age [11,15]. Although age-related health decline may induce behavioral changes aimed at alleviating adverse consequences, including engagement in physical activity [24], participants in our study consistently prioritized health as the primary motive for physical activity. However, among older participants, health improvement was by far the most important motive, thus partially aligning with the established pattern. General well-being motives – such as fitness improvement, promoting good health, and relaxation – were also prominent among older adults in our sample and may be associated with higher levels of total physical activity [16]. Additionally, the health motive for physical activity, at least in women, may be linked to higher self-esteem and, consequently, improved mental well-being [25].

Enjoyment and socially oriented motives, such as having fun, being with friends, and making new acquaintances, were more frequently reported by younger participants of both sexes, with stronger and more consistent effects observed among women. This pattern closely aligns with findings reported in previous studies [11,13,16]. Similarly, the Eurobarometer data [20] indicate that the younger EU citizens report the broadest range of motives, particularly those related to enjoyment and social engagement.

Health- and body-related motives, as well as improving fitness and weight management, showed more complex age patterns. While these motives were significantly associated with age among women and men, they remained relatively stable across age groups, especially during early and middle adulthood. This finding is consistent with earlier studies, suggesting that while health-related motives are universally important, younger adults often frame them in more specific, instrumental terms (e.g. weight control or fitness). In contrast, older adults adopt broader health-maintenance perspectives [11].

Taken together, the findings highlight clear and systematic differences in motivational profiles according to both sex and age. Younger men and women are primarily motivated by appearance, enjoyment, performance, competition, and making new acquaintances, whereas older adults prioritize health, relaxation, and fitness maintenance. These patterns are broadly consistent with European trends but also reveal locally specific nuances, particularly in the magnitude of age-related declines in the appearance- and performance-oriented motives, as well as the health improvement motive.

A limitation of this study is the unequal age distribution, as 41% of the participants were aged 55 or older. This mirrors the demographic structure of Vojvodina [26], where population aging is pronounced. Official statistics show that older adults are an increasing proportion, justifying their strong representation in the sample. Still, this overrepresentation may affect motivational profiles and must be taken into account in age-related comparisons. Future studies should aim for more balanced age groups or apply weighting to improve representativeness.

A further limitation is its cross-sectional design, which does not allow for establishing cause-and-effect relationships between aging and changes in motives for physical activity. This design cannot separate true age-related changes from cohort or generational differences, so observed differences between age groups may partly reflect generational effects rather than changes within individuals over time.

Conclusions

The study provides evidence of clear and systematic age- and sex-related differences in motives for engaging in physical activity in the Vojvodina region. Health-related motives were consistently prominent across all age groups, while motives related to enjoyment, appearance, performance, and competition were more common among younger participants and declined with age.

In addition, motivational priorities differed by sex, as women across age groups tended to focus on physical appearance, weight management, and relaxation, while men more often emphasized enjoyment and social interaction as motives for physical activity.

While the findings from our study largely align with the established European patterns, individuals in the Vojvodina region more frequently identified health and physical appearance as primary motives for physical activity, whereas the EU citizens placed greater emphasis on enjoyment, relaxation, performance and fitness enhancement, and counteracting age-related decline.

The results highlight the need for tailored physical activity promotion strategies that account for age- and sex-related differences in motivation. By aligning interventions with individuals' primary motivational drivers, practitioners can enhance engagement, adherence, and long-term participation. Programs targeting younger adults in Vojvodina may benefit from emphasizing enjoyment, social interaction, skill development, and performance-related goals, whereas initiatives for older adults should focus on health preservation, fitness, and stress management. Women may respond more positively to

activities addressing physical appearance and stress management, while men may prefer fun and socially engaging experiences.

These findings contribute to the growing evidence supporting personalized approaches to physical activity promotion across the lifespan. Future research could track motivational changes prospectively, and when combined with qualitative methods, such insights could provide information on more precise strategies for promoting physical activity in the Vojvodina population.

Disclosures and acknowledgements

The authors declare no conflicts of interest with respect to the research, authorship, and/or publication of this article.

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

This study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee at the Faculty of Sport and Physical Education, University of Novi Sad, Serbia (Ref No: 52-02-21/2026-1).

Artificial intelligence (AI) was not used in the creation of the manuscript.

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