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Original empirical article

PHYSICAL ACTIVITIES OF THE ELEDERLY POPULATION OF SOUTHEAST SERBIA: A PILOT STUDY

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Abstract. *Participation in various forms of physical activity is under the influence of complex interactive socio-demographic, physical, psychological and social factors as well as the environmental factors which surround us. This study had as its aim to investigate the participation in physical activities of the elderly in Southeast Serbia. The sample of participants consisted of 612 individuals, 364 of whom were men, and 266 of whom were women over the age of 60 (average age 68.3±5.7). In order to calculate the statistical significance of the differences of the deviations from the hypothetical values, the Chi-square test (χ^2) for the evaluation the quality of the match was used, and in order to determine the differences between the groups of men and women, the Chi-square test (χ^2) of independence was used (conclusions were drawn at the level of 0.05). On the basis of the results and the discussion, it was concluded that no statistically significant difference was found at the levels of physical activity between men and women, that generally both men and women are not very physically active and that there are barriers which are the same for both men and women, and which prevent them from taking part in physical activities.*

Key words: *Elderly people, physical activity, attitude.*

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INTRODUCTION

Physical activity is defined as any bodily movement produced by the skeletal muscle, which results in energy expenditure (Caspersen, Powell & Christenson, 1985). It is well known that inactivity is linked to various types of illnesses such as: coronary artery disease, stroke, hypertension, colon cancer, breast cancer, Type 2 diabetes, and osteoporosis (Katzmarzyk, Gledhill & Shephard, 2000). The level of physical activity is often used as a parameter for monitoring and evaluating the health of the population and is almost always connected to one's health status. This monitoring is especially important in the case of the elderly for the purpose of preventing many illnesses, the onset of hypokinesis, but also the decrease in the mortality rate.

The accumulation of data at the level of a population or one part of a population often includes self-evaluations regarding the level of physical activity by using a questionnaire or an interview. This method, which is much cheaper than a direct measuring method, can indicate tendencies and movement habits of this group of the population. Participation in various types of physical ability is under the influence of complex interactive socio-demographic, physical, psychological and social factors as well as the environmental factors which surround us (Sallis, Cervero, Ascher, Henderson, Kraft & Ker, 2006; Van Stralen, De Vries, Mudde, Bolman & Lechner, 2009). Nevertheless, an alarming rate of the sedentary lifestyle is present in the elderly population, irrespective of whether it is a case of highly developed (Vero et al., 2003) or developing countries (Monteiro et al., 2003).

It has been determined that women are characterized by a lower level of participation in sports-recreational activities when compared to men under the age of 60 (Leslie, Fotheringham, Owen & Bauman, 2001). Nevertheless, Bernstein, Costanza, & Morabia (2001) have noted that women are not inferior in comparison to men, and that only the way in which they manifest physical activities differs drastically in comparison to men, as they spend a lot of time doing housework and walk more than men. On the other hand, studies which have focused on the level of physical activity during leisure time (Monteiro et al., 2003; Burton & Turrell 2000; Gomes, Siqueira Sichieri, 2001) have shown that men are more active than women. The study carried out by Moschny, Platen, Klaaben-Mielke, Trampisch & Hinrichs (2011), which involved a simultaneous evaluation of sports activities and domestic activities led to the conclusion that men were more involved in sports activities than women, and that women spent more time each week in domestic activities than men did.

In numerous studies (Cohen-Mansfield, Marx & Guralnik, 2003; Booth, Owen, Bauman, Clavisi & Leslie, 2000; Rhudy, Dubbert, Kirchner & Williams, 2007; Ashe et al., 2009; Crombie et al., 2004) health issues and pain represented the most frequent barriers preventing the elderly from exercising. The lack of knowledge regarding the advantages and benefits of physical activity in this stage of one's life, the influence of the environment and psychological barriers such as the lack of motivation or the problem of transport to the facilities can also be the causes of the lack of exercise. The remaining barriers which the available literature indicates includes include the following: lack of time, interest, social support (Ebrahim & Rowland, 1996) and lack of childhood exercise (Schutzer & Graves, 2004).

Gender is one of the factors which has the greatest influence on the participation of the elderly in sports recreational activities (Trost, Owen, Bauman, Sallis & Brown, 2002),

which is why it is necessary to study the potential determinants of physical activity separately for each of the two genders. Nevertheless, the existing studies have focused on the study of potential forms of physical activity among the elderly, which focused solely on one type of activity, evaluating only men or women or indicating the results of their overall activities (Haley & Andel, 2010; Lawlor, Taylor, Bedford & Ebrahim, 2002; Ruchlin & Lachs, 1999; Ashe, Miller, Eng & Noreau, 2008; Chad et al., 2005; Walsh, Pressman, Cauley & Browner, 2001; Kaplan, Newsom, McFarland & Lu, 2001; Hinrichs et al., 2010).

The primary aim of this research was to analyze the involvement of the elderly in physical activities, depending on gender. In addition, we will study the factors which may prove to be potential obstacles preventing the elderly from taking part in physical activities.

THE METHOD

The sample of participants

The sample of participants consisted of a total of 612 individuals of an average age of 68.3±5.7, 364 of whom were men (68.5±5.8) and 266 of whom were women (68.1±5.6). All of the participants were randomly selected from 9 cities in Southeast Serbia (Niš, Leskovac, Vranje, Aleksinac, Vladičin Han, Bor, Zaječar, Prokuplje, Kuršumlija), while the condition for participating in the research was that they were over the age of 60.Once they had given their consent, the participants were questioned about their households. Before they filled out of the questionnaire, the participants were informed about the procedure involved.

Measuring instruments

For the purpose of this research, a questionnaire was used (Mitić et al., 2010) which consisted of 27 questions, which were divided into three groups. The first group of questions was defined as 1) *Frequency and type of activity*, and was evaluated by means of 12 items in the questionnaire. 2) The second group of questions included 5 items and this group was defined as the *Place, organization and type of exercise*. 3) The third group of questions consisted of 10 items, and this group of questions was defined as the *Barriers preventing participation in physical activities*. All of the items were of a closed type, and the questions were clearly and precisely designed to follow a certain order. In this research, a three-point and four-point Lykert scale was used.

The statistical analysis

The basic descriptive statistical parameters were calculated for each group by calculating the frequency and percentage. The statistical analysis was based on the use non-parametric tests for the evaluation of the significance of the differences, the Chi-square test (χ^2). In order to test the significance of the difference between the detected and theoretical frequencies in each group, we used the Chi-square test (χ^2) for the evaluation of the quality of the match. In order to determine the differences between the groups of men and women, we used the Chi-square test (χ^2) of independence. The level of significance was defined as 0.05. The results were processed with the help of the Statistical Package for the Social Sciences for Windows (SPSS) (Version 12.0) (Chicago, IL, USA).

THE RESULTS

Table 1 shows the determined frequencies, percentages, the Chi-square test (χ^2) for the evaluation of the quality of the match for each group individually and the Chi-square test (χ^2) of independence between the groups for the group of questions which was defined as the Frequency and the type of activity.

Table 1. Frequency and type of activity

		Male (346)		Female (266)		Male vs Female	
Claim	**Response**	**Frq (%)**	**χ^2**	**Frq (%)**	**χ^2**	**χ^2**	**Sig.**
How often do you take part in PA during your free time	never	151 (43,6)	129,14**	103 (38,7)	94,99**	2,21	.530
	sometimes	123 (35,5)		108 (40,6)			
	1-2/week	53 (15,3)		38 (14,3)			
	2-4/week	19 (5,5)		17 (6,4)			
How often do walk as part of your PA	never	36 (10,4)	78,37**	28 (10,5)	99,26**	6,90	.075
	sometimes	56 (16,2)		24 (9,0)			
	1-2/week	124 (35,8)		103 (38,7)			
	3-4/week	130 (37,6)		111 (41,7)			
If and how often you play basketball as part of your PA	never	312 (90,2)	788,22**	242 (91,0)	621,36**	3,09	.377
	sometimes	27 (7,8)		21 (7,9)			
	1-2/week	6 (1,7)		1 (0,4)			
	3-4/week	1 (0,3)		2 (0,8)			
If and how often you play soccer as part of your PA	never	315 (91,0)	808,19**	239 (89,8)	384,36**	0,63	.731
	sometimes	24 (6,9)		23 (8,6)			
	1-2/week	6 (1,7)		4 (1,5)			
	3-4/week	1 (0,3)		- (-)			
If an how often you run as part of your PA	never	293 (84,7)	670,27**	227 (85,3)	524,70**	0,32	.956
	sometimes	45 (13,0)		32 (12,0)			
	1-2/week	5 (1,4)		5 (1,9)			
	3-4/week	3 (0,9)		2 (0,8)			
If and how often do you ride a bicycle as part of your PA	never	233 (67,3)	359,31**	186 (69,9)	299,86**	1,05	.787
	sometimes	78 (22,5)		51 (19,2)			
	1-2/week	21 (6,1)		17 (6,4)			
	3-4/week	14 (4,0)		12 (4,5)			
If an how often do you swim as part of your PA	never	281 (81,2)	611,34**	223 (83,8)	311,42**	5,17	.075
	sometimes	62 (17,9)		38 (14,3)			
	1-2/week	1 (0,3)		5 (1,9)			
	3-4/week	2 (0,6)		- (-)			
If and how often do you play volleyball as part of your PA	never	329 (95,1)	907,20**	258 (97,0)	234,96**	0,02	.903
	sometimes	12 (3,5)		8 (3,0)			
	1-2/week	4 (1,2)		- (-)			
	3-4/week	1 (0,3)		- (-)			
If and now often do you play tennis as part of your PA	never	329 (95,1)	907,38**	260 (97,7)	242,54**	1,12	.288
	sometimes	13 (3,8)		6 (2,3)			
	1-2/week	2 (0,6)		- (-)			
	3-4/week	2 (0,6)		- (-)			

If and how often do you fish as part of your PA	never	266 (76,9)	519,59**	211 (79,3)	376,07**	3,85	.277
	sometimes	63 (18,2)		45 (16,9)			
	1-2/week	10 (2,9)		6 (2,2)			
	3-4/week	7 (2,0)		4 (1,5)			
If and how often do you hunt as part of your PA	never	311 (89,9)	781,56**	230 (86,5)	523,92**	2,95	.398
	sometimes	28 (8,1)		31 (11,7)			
	1-2/week	5 (1,4)		3 (1,1)			
	3-4/week	2 (0,6)		2 (0,8)			
if and how often do you mountain climb as part of your PA	never	312 (90,2)	789,88**	238 (89,5)	595,98**	0,79	.850
	sometimes	30 (8,7)		26 (9,8)			
	1-2/week	3 (0,9)		1 (0,4)			
	3-4/week	1 (0,3)		1 (0,4)			

Legend: *PA - Physical activity, Frq. - frequency - number of participants,* χ^2 *- Chi-square test, ** - level of significance p< .01 within group, Sig – between-group test*

By analyzing the obtained frequencies of the proposed claims, and the values of the χ^2 test of the quality of the match, we can note that most of the values, whether in the case of men or women, deviate from the expected hypothetical values, and in the case of all the questions, a statistically significant difference was determined at the .01 level of significance. (**). On the basis of the obtained frequencies (Frq), we can conclude that a very small number of elderly men exercises regularly (5,5%), that is, that the number of those who exercise occasionally is also small (15,3%). A great number of male participants exercises occasionally (35,5%), while the majority of them do not exercise at all (43,6%). Similar results were also obtained in the case of elderly women. Only 6,4% of the women exercise regularly, while 14,3% exercise regularly. A great number of women exercises sometimes (40,6%), while most of them do not exercise at all (38,7%). When it comes to the type of the activity, both men and women are usually involved in walking as a physical activity (men 73,4%; women 80,4%), while riding a bicycle comes second (men 10,1%; women 10,9%). The remaining physical activities are present in only a small percentage both in the case of men and women, while some groups do not participate in certain activities at all. In order to determine the differences between the groups, the χ^2 test of independence was used. The results have shown that there are no statistically significant differences between the groups in relation to frequency and the choice of activities between the men and women (Table 1). The values of the χ^2 test of independence (with Yates' correction) have shown that in the case of all of the applied claims, no statistically significant difference was determined between the men and women (Sig.). By analyzing the obtained results, we can conclude that both the men and women are not physically active, and that the physical activities they most often participated in are walking and riding a bicycle. In addition, there is no difference between the groups in terms of frequency and type of activity.

The results of the answers to the group of questions which referred to the organization and type of exercise can be found in Table 2.

Table 2. The place and organization and type of exercise

		Male (346)		Female (266)		Male vs Female	
Claim	**Response**	**Frq (%)**	**χ^2**	**Frq (%)**	**χ^2**	**χ^2**	**Sig.**
Do you think you have enough free time	yes	171 (49,4)	299,20**	148 (55,6)	66,07**	2,51	.285
	partially	117 (33,8)		76 (28,6)			
	no	58 (16,8)		42 (15,8)			
In my free time I take part in PA by regularly inviting my friends to go running with me....	never	220 (63,6)	577,11**	174 (65,4)	131,33**	0,83	.661
	sometimes	95 (27,5)		65 (24,4)			
	regularly	31 (9,0)		27 (10,2)			
In my free time I take part in PA by visiting a sports center	never	313 (90,5)	1359,82**	243 (91,4)	404,57**	0,19	.908
	sometimes	28 (8,1)		20 (7,5)			
	regularly	5 (1,4)		3 (1,1)			
In my free time I take part in PA by taking part in my personal exercise program	never	283 (81,8)	1066,21**	225 (84,6)	316,47**	1,68	.431
	sometimes	51 (14,7)		30 (11,3)			
	regularly	12 (3,5)		11 (4,1)			
In my free time I take part in PA by visiting sports club	never	335 (96,8)	1600,82**	259 (97,4)	490,97**	0,20	.903
	sometimes	9 (2,6)		6 (2,3)			
	regularly	2 (0,6)		1 (0,4)			

Legend: *PA - Physical activity, Frq. - frequencies - number of participants, χ^2 - Chi-square test, ** - level of significance p< .01 within each group, Sig - the level of significance between the groups*

The frequencies obtained in relation to the proposed claims, and the values of the χ^2 test for the quality of the match, have shown that both in the case of men and women, the obtained values diverge from the expected hypothetical values, and that in the case of all the questions, a statistically significant difference was determined at the .01 level. (**). By analyzing the obtained answers it can be concluded that the greatest number of men (49,4%) and women (55,6%) believe they have enough free time, but they very rarely choose to participate in physical activities with their friends during their free time (63,6% men and 65,4% women).

When it comes to the location of the realization of physical activities, a very small number of participants, either men or women visits a sports center (1,4% men and 1,1% women) or a club. A difference between the groups was determined by means of the χ^2 test of independence. The results of the χ^2 test (with Yates' correction) have shown that there are no statistically significant differences between the groups of men and women in the choice of location and organization and the type of exercise (Sig. > .05) (Table 2.).

Table 3 shows the results of the Chi-square test (χ^2) for the evaluation of the quality of the match for each group and the Chi-square test (χ^2) of independence between the groups for the group of questions which referred to the barriers for the involvement in physical activity.

Table 3. Barriers preventing participation in physical activities

		Male (346)		Female (266)		Male vs Female	
Claim	**Response**	**Frq (%)**	**χ^2**	**Frq (%)**	**χ^2**	**χ^2**	**Sig.**
I do not feel the need	yes	222 (64,2)	563,84**	178 (66,9)	135,03**	0,51	.903
	partly	61 (17,6)		43 (16,2)			
	no	63 (18,2)		45 (16,9)			
I miss my habits	yes	231 (66,8)	633,52**	185 (69,5)	157,00**	2,54	.280
	partly	70 (20,2)		41 (15,4)			
	no	45 (13,0)		40 (15,0)			
My age is a problem	yes	249 (72,0)	761,81**	199 (74,8)	205,94**	2,04	.360
	partly	40 (11,6)		34 (12,8)			
	no	57 (16,5)		33 (12,4)			
I have no time	yes	217 (62,7)	528,29**	177 (66,5)	137,42**	2,03	.361
	partly	51 (14,7)		29 (10,9)			
	no	78 (22,5)		60 (22,6)			
The material costs are high	yes	231 (66,8)	625,43**	190 (71,4)	178,13**	2,01	.367
	partly	42 (12,1)		24 (9,0)			
	no	73 (21,1)		52 (19,5)			
I am bothered by the lack of understanding in my environment	yes	221 (63,9)	562,78**	177 (66,5)	147,84**	0,52	.767
	partly	27 (7,8)		18 (6,8)			
	no	98 (28,3)		71 (26,7)			
The lack or distance of facilities	yes	230 (66,5)	626,61**	187 (70,3)	174,01**	1,42	.490
	partly	22 (6,4)		18 (6,8)			
	no	94 (27,2)		61 (22,9)			
There is no one to organize it	yes	232 (67,1)	635,51**	180 (67,7)	145,54**	1,02	.601
	partly	31 (9,0)		29 (10,9)			
	no	83 (24,0)		57 (21,4)			
I have no place to exercise	yes	212 (61,3)	496,72**	178 (66,9)	144,03**	3,03	.219
	partly	45 (13,0)		24 (9,0)			
	no	89 (25,7)		64 (24,1)			
Other reasons	yes	329 (95,1)	1532,12**	256 (96,2)	473,78**	0,60	.739
	partly	4 (1,2)		3 (1,1)			
	no	13 (3,8)		7 (2,6)			

Legend: *Frq. - frequencies - number of participants, χ^2 - Chi-square test, ** - level of significance p< .01 within each group, Sig - between-group test*

By analyzing the obtained results, we can conclude that the greatest number of men (72,0%) and women (74,8%) cite that age is the greatest obstacle for participating in physical activities and that the material costs are significant (66,8% men and 71,4% women). In addition, a great number of participants from both groups cited that they miss their exercise habits (66,8% men and 69,5% women) and that they do not feel the need to exercise. The distance to the exercise court, the lack of locations for exercise and the organization itself are also a kind of barrier which prevent the elderly from taking part in physical activities. The values of the χ^2 test for the evaluation of the quality of the match deviate from the expected hypothetical values in a statistically significant manner, both in the case of men or women. In addition, for all of the questions we determined a statistically significant difference at the .01 level.

The χ^2 test of independence (with Yates' correction) was used to determine the differences in the existence of the barriers that prevent involvement in physical activities between the groups of men and women. On the basis of the obtained results (Sig.) we can conclude that there are no statistically significant differences between the groups. The results have shown that in the case of both men and women there are barriers that prevent people from taking part in physical activities, but that they do not differ in relation to the groups of participants (Table 3.).

THE DISCUSSION

In the area of Southeast Serbia, there are no statistically significant differences in terms of the participation in physical activities of the elderly in terms of gender, unlike in the case of the elderly in the EU (Varo et al., 2003), Australia (Booth et al., 2000), Germany (Moschy et al., 2011), Brazil (Montiro et al., 2003), Turkey (Aslan et al., 2008) or Canada (Ashe et al., 2009; Kuplan et al., 2001).

In this study we have noted a significant lack of dedication to any form of sport-recreational activity, except for walking. Sports-recreational activities such as: basketball, running, cycling, swimming, volleyball, tennis, fishing, hunting and mountain climbing, are almost completely missing from the activities of the elderly population of Southeast Serbia. The mentioned SRA cannot be found either for the men or the women, nor were any differences found between the genders.

Unlike Southeast Serbia, in Brazil the most frequent types of activities are walking, sports games (soccer, basketball and volleyball), fitness and swimming in the case of elderly men, while in the case of women, they mostly walk or run, or take part in fitness exercises. The main reason for participating in sports-recreational activities are health reasons, followed by recreational reasons (Montiro et al., 2003).

If we look back to an extensive study on the sedentary lifestyle in EU countries, only in Portugal can we find more inactive individuals than in Southeast Serbia. Nevertheless, in Southeast Serbia there are more inactive people than in Sweden, Ireland, Austria, Finland, Luxembourg, Great Britain, Denmark, Holland, France, Italy, Greece, Germany, Spain and Belgium (Varo et al., 2003).

Unlike Southeast Serbia, in Germany the most frequent types of sports-recreational activities are riding a bicycle in different forms, swimming and fitness, while the following activities are selected less than 10% of the time we find: dancing, bowling, brisk walking, running, sports games and winter sports (Moschy et al., 2011). In the case of white women in the US, as well as in Southeast Serbia, walking is the most prominent, followed by gardening, swimming and cycling (Walsh et al., 2001).

In Canada, in addition to the most frequent sports-recreational activity, walking, the other frequently selected activities include gardening, fitness exercises, dance, golf, strength training, fishing, cycling, running, aerobics and sports games.

In spite of the small rate of participation in sports-recreational activities, most of the studied elderly individuals of both genders from Southeast Serbia had enough free time. As a result, the previous data regarding the rate of participation in sports-recreational activities sounds alarming.

Approximately 10% of the participants of both sexes from the region of Southeast Serbia regularly have company with whom to take part in physical activities, which in comparison to Australia is very little (Booth et al., 2000).

A little over 1% of participants included in the research go to sports centers in order to take part in some form of physical activity, which is not in agreement with the results collected from Central Serbia (Nešić et al., 2006), Germany (Hinrichs et al., 2010) and the US (Walsh et al., 2001). Only approximately4% of the participants from the region of Southeast Serbia, of both sexes, have their own physical activity program.

The results of this research indicated that in Southeast Serbia, that is, in the cities where the participants in this study live, there are almost no forms of organized physical activities or they are not suitable for the elderly population.

The obtained results in this study of the barriers preventing participation in physical activities indicate that nearly 70% of the participants have a certain problem which prevents them from taking part in physical activities. Percentage wise, the greatest number of participants indicated that age is the main cause of the lack of physical exercise and activities in general, in which case there are no significant differences between men and women. In the research carried out by Booth et al. (2000) the percentage of people involved in physical activities is higher for men than for women. On a random sample of 449 Australians over 60, Booth et al. (2000) showed that men were physically more active in relation to women. Nevertheless, we cannot assume that physical activity is hindered by age. The level of activity does not decrease with age. Participants aged from 65 to 69 were more active than participants aged from 60 to 64 and of those over the age of 70.

By means of a further analysis of the results, similar percentages indicate a lack of the habit of exercise and material costs, which are necessary for higher quality forms of physical activity. The habit of taking part in physical exercise is to a great extent a reflection of the way of life in all age groups. It is likely that the majority of them did not take part in organized forms of exercise in their youth. Great material expense for organized forms of exercise is also an intruding factor, if we take into consideration the difficult material position of the elderly in the Southeast region of Serbia. It is probable that these individuals cannot afford the means for the realization of physical activities. Nevertheless, there are forms of physical exercise which do not require material costs, but only free time, which the elderly probably have. In addition to material costs, in the research focused on other barriers preventing the elderly from exercising, the consumption of alcohol was also pointed out (Ashe et al., 2009; Aslan et al., 2008).

The lack of the need for a person to be physically active indicates that the lack of physical exercise habits and the lack of a strategy for propagating exercise as a means of preventing certain health problems. The question is why do the elderly not want to take part in physical activity? Crombie et al. (2004), concluded that a great number of the elderly do not take part in physical activities even though physical exercise is healthy, and stated that indifference, physical obstacles, difficulties in the approach and hesitation about joining a group which is already practicing were the basic barriers.

There are studies in which the participants indicated health problem as a limiting factor, but at the same time health problem can also be an incentive, or a motive for physical activity (Schutzer & Graves, 2004). Schutzer & Graves (2004) reached the conclusion that exercise is the basic component in the alleviation of the influence of many chronic illnesses connected with old age, but that chronic illness is also a barrier for actually taking part in the exercise.

The level of activity decreases with age and represents a greater health risk. Doctors can play a key role in the mission aimed at motivating the elderly to participate in physical activities. Cooper et al. (2001) studied one's state of health as a barrier for participat-

ing in physical activity. They used information from different sources including self-reporting and observation during walking and balance tests. They used sensors to identify damage, pain and fatigue as factors which prevent people from participating in physical activities. They gave suggestions for helping patients overcome these obstacles. Thus, Ashe et al., (2009) cite that walking, gardening and exercising at home are three of the most common forms of physical exercise, which in the case of this research could be used to alleviate limitations.

The main factors that have been pointed out are the lack of understanding in the environment, the distance of the location, the lack of organization. The cited circumstances are a reflection of the national character and socio-psychological factors and objective circumstances.

Generally speaking, the elderly are to a very small extent included in physical activities. The reasons or limiting factors differ, but a more specific strategy of propagating certain forms of movement or exercise could to a great extent contribute to a different image. It is necessary to study the socio-psychological factors in greater detail, which should yield more detailed answers to the obtained results.

The promotion of physical activities should be carried out not only in the population included in the study, but also among children, the young and adults. (Bernstein et al., 2001) in order to alter their awareness regarding physical activity. This could lead to a greater participation of the sedentary population in physical activities.

When elderly individuals are included in physical exercise programs then it is very important to respect the recommendations regarding the intensity and frequency of exercise, so that any contraindications could be avoided. The recommendations for individuals over 60 require moderate intensity physical activity, for at least 30 minutes 3-5 times a week, although more recent recommendations call for daily physical exercise (Pate et al., 1995). The US Surgeon General's Report recommends a weekly amount of physical activity as approximately 1,000 kcal/week (or 150 kcal/day). The most frequently selected types of activity in this population include walking, gardening and housework (Ashe et al., 2009). Even though aerobic activities dominate, more and more often are strength exercises recommended to make up for the loss of muscle mass which occurs in the aging process, and thus decrease the risk of falling and occurrence of injury.

CONCLUSION

It is well-known that taking part in various types of physical activities under the influence of complex interactive socio-demographic, physical, psychological and social factors, as well as environmental factors. On a sample of 612 elderly individuals from the Southeast region of Serbia, we determined the rate of participation in physical activities, as well as any factors which could be potential obstacles for the participation of these individuals in physical activities. It was concluded that men and women over the age of 60 are not physically active and that there are barriers which prevent them from taking part in physical activities, which are the same for men and women. Even though no statistically significant differences were determined in the level of physical activities between men and women, generally speaking men are physically more active than women.

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FIZIČKA AKTIVNOST STARIH OSOBA JUGOISTOČNE SRBIJE - PILOT STUDIJA

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Učešće u različitim oblicima fizičke aktivnosti pod uticajem je kompleksnih interaktivnih sociodemografskih, fizičkih, psiholoških i društvenih faktora kao i faktora sredine, koja nas okružuje. Istraživanje je imalo za cilj da se istraži angažovanje u fizičkim aktivnostima starih osoba sa područja Jugoistočne Srbije. Uzorak ispitanika činilo je 612 osoba, od čega je bilo 364 muškarca i 266 žena, starih preko 60 godina (prosečne starosti 68.3±5.7 godine). Za izračunavanje statističke značajnosti razlika odstupanja od hipotetičkih vrednosti primenjen je Hi-kvadrat test (χ^2) za procenu kvaliteta podudaranja, a za utvrđivanje razlika između grupa muškaraca i žena primenjen je Hi-kvadrat test (χ^2) nezavisnosti (zaključivanje na nivou značajnosti 0.05). Na osnovu rezultata i diskusije zaključeno je da je ne postoji statistička značajna razlika u nivou fizičke aktivnosti između muškaraca i žena, da su generalno i muškarci i žene vrlo malo fizički aktivni i da postoje barijere koje su iste i kod muškaraca i žena, koje ih sprečavaju da se uključe u fizičke aktivnosti.

Ključne reči: *Stare osobe, fizička aktivnost, stav.*