

## **THE IMPACT OF DEMOGRAPHIC FACTORS UPON THE LEVEL OF PHYSICAL ACTIVITY IN FEMALE STUDENTS**

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*Original scientific paper*

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### **Abstract**

*The research has been carried out on a sample of 257 participants divided into two subsamples (124 male participants and 133 female participants) age 18-22, with a sole purpose to determine the impact of demographic factors upon the level of physical activity in students from the Ss. Cyril and Methodius University in Skopje. For the purpose of this research 35 variables have been employed. The data was processed using multi-variant and uni-variant parametric and nonparametric statistical procedures. The subject of the research was to determine the impact of some social factors on the level of physical activity in students. The goal of the research was to detect the social environment through some social and demographic factors for the physical activity of the student youth from the Ss. Cyril and Methodius University. The results of the research show that over 80% of the participants from both sexes spend more than two hours a day on a computer or watching TV during the week. The most common reasons for physical inactivity according to students are: too many study obligations, lack of time, lack of sports facilities and access to them. The predominant barrier for female participants is lack of time. The dominant motive for practicing physical activity in female participants is the reason associated with appearance (body image). According to male participants the most common reasons for physical inactivity are: too many study commitments, lack of time, lack of sports facilities and access to them. Main barrier in male participants as well as female participants is lack of time. Male participants believe that physical activity and sports will help them to improve the health and resistance, stay in shape, that will strengthen (tone) the muscles and look better, improve strength, increase the level of energy.*

**Key words:** *demographic features, adolescents, free time, physical activity.*

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### **Introduction**

This research was undertaken in view of the necessity to expand scientific understanding in order to determine the impact of demographic factors upon the level of physical activity in students. The current social developments and changes taking place on the territory of the Republic of Macedonia have changed the entire structure of its social and cultural environment. The political, cultural, economic and social aspects of living are facing severe and complex transformation. In fact, these events certainly have an impact on the system of values.

On the other hand, the already existing value models that have been incorporated in the national and cultural identity of the Republic of Macedonia show a tendency towards resistance to such changes. These kinds of circumstances make the fulfillment of the social development process even more complex, as well as the implementation of external foreign experience.

### **Methods**

Whilst implementing methods for processing basic data for this research, attention was paid to the possibility that the provided results and conclusions withdrawn with the processing be rather easily understood, interpreted and applied in research and pedagogical practice.

For all the variables on the interval scale the following basic statistical parameters have been estimated:

Mean average (X);

Standard deviation (SD);

Quotient of variability (KV);

Minimum result (Min);

Maximum result (Max);

For the remaining variables the frequency and percentage (%) have been estimated.

The research has been carried out on a representative sample of 257 participants. The sample was divided into two subsamples of 124 male participants and 133 female participants. The sample age was defined as chronological age of 18-22, for male and female students in their first and second year of study. This age has been selected in view of the fact that students of this age attend P.E. university classes. It is also important to mention that at this age the biological and developmental changes are not dramatically stressed. This allows a relevant, stable and valid manner of determining dimensions and their relations. The development process and level of maturity are high and the appetite and desire are stable. The fact that this population has not been researched sufficiently in this region was also another challenge. The research covered only students that attended regular P.E. classes. The application for the survey was voluntary and anonymous.

## Results

Students from seven faculties within the Ss. Cyril and Methodius University took part in the survey, namely the Faculty of Forestry, the Faculty of Pedagogy, the Faculty of Civil Engineering, the Faculty of Technology, the Faculty of Design, the Electrical Engineering and Technology and the Music Academy. Table 1, shows that 28.79% of the participants are at the age of 18, 61.87% are at the age of 19, 6.23% at the age of 20, 2.33% at the age of 21, and 0.39% at the age of 21. 0.39% of the participants are students at the age of 28, who due to various reasons enrolled later or have decided to change their qualification.

Table 1. Age of the respondents

		Male	Female	Total
18 years	Number	34	40	74
	%	27,42	30,08	28,79
19 years	Number	71	88	159
	%	57,26	66,17	61,87
20 years	Number	12	4	16
	%	9,68	3,01	6
21 years	Number	6		6
	%	4,84	0,00	2,33
22 years	Number	1	0	1
	%	0,81	0,00	0,39
And more yr. Total	Number	0	1	1
	%	0,00	0,75	0,39
		124	133	257

Table 2. Participation of students by faculties

		Male	Female	Total
Forestry	Number	1	0	1
	%	0,81	0,00	0,39
Pedagogu	Number	45	81	126
	%	36,29	60,90	49,03
Civil Engineering	Number	39	34	73
	%	31,45	25,56	28,40
Technological	Number	10	2	12
	%	8,06	1,50	4,67
Design	Number	0	2	2
	%	0,00	1,50	0,78
FEIT	Number	4	0	4
	%	3,23	0,00	1,56
Music academy	Number	25	14	39
	%	20,16	10,53	15,18
Total	Number	124	133	257

In terms of the students that attended P.E. classes in the winter semester in 2011/2012, the data are as follows.

As it has been outlined, the most present were students from the Faculty of Pedagogy, the Faculty of Civil Engineering, and the Music Academy. This is mostly due to the responsibility of the Dean Department and the Professors responsible for the first year of study bearing in mind the importance of P.E.

According to the place of residence of students, the situation is as follows:

Table 3. Place of residence

		Male	Female	Total
City	Number	81	111	192
	%	65,32	83,46	74,71
Village	Number	43	22	65
	%	34,68	16,54	25,29
Total		124	133	257

The table shows that 74.71% of the surveyed students are from the urban areas, whereas 25.29% are from the rural areas, which is interesting information for the further analysis of this research.

The following answers were given concerning how much students exercise during their free time:

Table 4. Number of students exercising in their free time

		Do not exercise	Once a month	Once a week	Twice a week	Three times a week	Four times a week	Every day	P
Male	Number	8	6	34	32	14	13	17	,015
	%	6,45	4,84	27,42	25,81	11,29	10,48	13,71	
Female	Number	20	7	35	47	12	6	6	
	%	15,04	5,26	26,32	35,34	9,02	4,51	4,51	
Total	Number	28	13	69	79	26	19	23	
	%	10,89	5,06	26,85	30,74	10,12	7,39	8,95	

The estimate of the physical activity of the student youth covered by this research would not be complete, without taking into consideration the time spent doing these activities i.e. exercising. The abovementioned indicates that 10.89% of the students stated that they do not exercise, 5.06% exercise once a month, 26.85% exercise once a week, 30.74% exercise twice a week, 10.12% exercise three times a week, 7.39% exercise four times a week, and 8.95% of the students stated that they exercise every day. Thus, according to their statements it can be noticed that 73.54% of the student population do not get the recommended amount of physical activity, whereas only 26.46% of the students do the recommended amount of physical activity, which is an alarming small percent.

## Discussion

In view of the benefits of practicing any type of physical activity, the fact that a very small amount of students engage in the recommended physical activity is quite alarming. A large percentage of students aged 18-22 do not engage in regular (recommended) physical activity, which is especially common for the female population. A small percentage of students practice some form of organized sport. A large part of the students spend their free time in a sedentary life style (most of their free time is spent on the computer or watching TV). There are a number of studies comparing the impact of factors and the level of physical activity. Researchers Berry, Naylor and Higgins in a sample of 327 participants aged 15-17, studied the psycho-social moment in young adolescents aiming to discover why the physical activity of adolescents reduces with age and how to increase the same. The research showed that 30% of the participants did not practice the recommended physical activity and a number of psychosocial determinants were varying between active and inactive, without discovering the cause and affect relation of their physical engagement of a certain degree and the type of sport.

Where does the problem lie and what is missing? Perhaps the family, as the basic unit for every individual, is responsible and should motivate the child from an early age to engage in a certain sports activity, which alongside means appropriate orientation, health care and proper physical development. This also means fulfilling the responsibility of parents to employ doctors' recommendations from the time of the first check-up concerning bone, muscle, and spine development. Schools are responsible with their educational mottos and programs, and education staff should teach youngster to pay attention to their health,

nutritional habits, and body condition. The local self-government is responsible for and should pay attention to the appearance and safety of the local communities, green areas, playgrounds and sport facilities available to all citizens and above all to children and youth.

Katic (1988) studied the impact of social status features on the intensity of kinesiological activities. The study was conducted on a sample of 148 female participants aged 18-21. Social status was estimated with the DS-2 system, while the intensity of kinesiological activities was estimated with the K-216 scale. The results showed that there is a low, but still statistically significant relationship between social status and engagement in kinesiological activities.

Sarpe and assoc. (2004) monitored how the environment affected physical activity in two cities in the state of Carolina in 1936, with 36.9% African-Americans and 63.1% whites using six survey questionnaires according to the BRFS methodology. The results showed that the environment, ie the social environment in which the participant lives, has an impact on physical activity.

Powell (2004) studied the association of some psychological factors with students' physical activity. The research was performed on a sample of 68 participants, 27% were male and 73% female, which were divided into physically active and inactive groups. The results statistically showed that active students had the support of people and the environment and received a higher degree of self-efficacy to overcome the barriers that are most often the cause of physical inactivity.

Researchers Barry, Nylor, and Higgins (2005) also analyzed a sample of 327 adolescents aged 15 to 17 years and analyzed the psychosocial moment of physical activity in young adolescents. The study was based on the basics of the trans-theoretical model and aimed to find out why adolescents with age reduce their level of physical activity and how to increase it. The results of the research showed that 30% of the participants did not have the recommended physical activity, and most of the psychosocial determinants were on the correlation with or without activity, not taking into the consideration the reasons and the consequences for their physical involvement to some extent and type of sport.

Koprivnjak, (1981), conducted tests on a randomly selected sample of 313 female students from 15 high school institutes and faculties at the University of Ljubljana, who were involved in compulsory physical education classes. The goal of the research was to determine the impact of some indicators of the social status of this population on physical culture, ie their engagement with physical activities. With the help of regression analysis, the author concluded that social status affects the attitude towards physical culture.

The European Research Center in Brussels (2002) investigated the level of physical activity in citizens of the European Union aged 15-65 years. Physical activity was assessed with an international survey questionnaire from the European Union. The survey found that 57.4% of European Union citizens do not have physical activity, 9.1% are physically active twice a week, 7.2% three times a week, and 6.1% have physical activity every day of the week. Among the respondents, the citizens of Spain were physically the most inactive, while the citizens of the Netherlands were at the highest level of activity. The citizens of Belgium walked the least, while the citizens of Finland used the most free time to sit and watch TV for more than 3.5 hours a day.

Morgan et al. (2003) investigated how certain factors affect physical activity in British high school students. The research was conducted on a sample of 402 respondents, divided into two groups- 207 aged 11-12 years and 195 participants aged 15-16 years. To conduct the research, an instrument was used to measure the time spent in physical activity, the degree of perceived benefits and barriers to physical activity, social support from friends and parents. Demographic variables were also included. The results were processed by hierarchical regression analysis and showed that 31.9% of the respondents had physical activity in the observed week. Students spent 2.8 hours a day watching TV and 1.7 hours a day working on a computer. The results of the regression analysis indicated that the degree of barriers, social support from friends and parents, statistically significantly affected the time spent in physical activity. Sedentary habits - indicators of physical inactivity, time spent watching TV and working on a computer statistically significantly did not affect the time spent in physical activity.

From the review of researches on this subject, it can be concluded that they were conducted mainly in developed countries around the world, in all age categories and both sexes, different races, of different ethnicity and with different socioeconomic status, living in urban areas, sub-rural and rural regions.

The study found that physical activity was associated with socioeconomic status. Namely, people with higher education and those who are better situated have a higher level of physical activity, but this is more true for adults. Students as a category of the young population in terms of socio-economic status are materially supported because they are not employed and do not have their own funds. On the other hand,

there are a number of reasons that prevent people from being physically active. The most common cause of inactivity is lack of time, but also many other reasons. If they are discovered, (which are the most common reasons why people are not physically active), they can be prevented through adequate programs and strategies. The social environment can greatly affect the level of physical activity in all age groups. Adult social support may come from friends, colleagues, or close family members.

In general, this support should consist of encouraging the individual to be physically active, as well as having a place to leave their children while playing sports or recreation.

## Conclusion

This research has been carried out on a sample of 257 participants divided into two subsamples (124 male participants and 133 female participants) age 18-22, with a sole purpose to determine the impact of demographic factors upon the level of physical activity in students from the Ss. Cyril and Methodius University in Skopje. For the purpose of this research 4 variables have been employed. The data obtained were processed by using statistical analyses.

Based on the data obtained, and use of the appropriate statistical method the following conclusions have been made:

The research results indicate that even above 80% of the participants of both genders spend more than two hours working on the computer or watching TV on a daily basis during workdays. The most frequent reasons for inactivity according to students are too many responsibilities at university, lack of time, lack and inaccessibility of sport facilities. The dominant barrier for female participants is lack of time. Female participants mostly believe that physical activity and sports will help them improve the shape and appearance of their body, reduce weight, stay fit, whereas they rarely believe that physical activity will enable them to keep in contact with their friends, meet new people and have fun. The dominant motive for engaging in physical activity for female participants is appearance or the body image.

The most frequent reasons for inactivity for male participants are too many responsibilities at university, lack of time, lack and inaccessibility of sport facilities. The dominant barrier for female participants, as well as female participants is lack of time. Male participants mainly believe that physical activity and sports will enable them to improve health, boost the body defense system, stay fit, build up muscles and look better, improve strength and energy levels. The dominant factor for engaging in physical activity in male participants is health-fitness (improving their abilities).

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