

## WORRYING TENDENCIES AMONG STUDENTS ENLISTED FOR AEROBICS CLASSES AT SOFIA UNIVERSITY “ST. KLIMENT OHRIDSKI”

*Original scientific paper*

**Petya Hristova**

*Sport Department at Sofia University “St. Kliment Ohridski”, Sofia, Bulgaria*

### **Abstract**

*The article highlights some worrying tendencies among students enlisted for aerobics classes at Sofia University “St. Kliment Ohridski” noted when analyzing the results of scientific study held in 2015-2016 school year. The purpose of the study was to determine the impact of practical-theoretical model for Physical Education in university aerobic classes, aimed at increasing the students’ interest and motivation for physical activity. The study was realized on a sample of total 175 female participants, at the age from 19 to 23, students from first to fourth year of study at Sofia University “St. Kliment Ohridski”. Study sample was divided in two different focus groups. Participants were interviewed regarding their health and life style self-evaluation and their knowledge on the importance and benefits of regular physical exercises. The analysis show that the majority of the students lead a sedentary life style and follow strict diets to get the look they want which causes variety of worrying symptoms such as: low weight and BMI, pains and aches throughout the body due to weak muscles, low fitness level, low stamina and physical agility. At the same time they define their life style as healthy. We recommend a theory course to be included in the Physical Education of university students in Bulgarian Universities as well as increased number of sport classes. The University’s Authorities should seriously consider the meaning and benefits of raising healthy young generations for the future of our country.*

**Keywords:** *university students, sedentary life style, low weight, weak muscles, low fitness level, wrong concepts about health and healthy life style*

### **INTRODUCTION**

Nowadays, aerobics occupies one of the first places among fitness disciplines. Thanks to its proved integrated impact, it is an effective way to solve a number of remedial tasks, for prevention of many diseases, to a healthy-lifestyle, to reduce stress, for relaxation and fun. Maybe its popularity makes it preferred among the university students when they choose between sport disciplines for the school year. The core of aerobics is the gymnastic exercises which as well-known allow precise determination of the physical load and modeling of the aerobic complexes according to the desired goal (Hristova (Христова), 2017).

At this stage of the development of mankind, the negative effects from sedentary life style affect all social spheres of society, including students. Immobilization is the main cause for premature aging and many diseases. In the recent years due to the problems in the system of Physical Education and Sport in Bulgaria a large percentage of university students are showing increasingly lower fitness level and lack of motivation for physical activity. To this fact lead different social financial and other causes but mainly the lack of educational (theoretical) element expounding the importance and benefits of regular physical exercise in the course of Physical Education at school (Иванов (Иванов), 2006).

Student age is the time of building and shaping of the personality. The young person reorganizes his value system, forms his point of view and builds his self-esteem and self-consciousness. In the period 18-25 years is manifested the optimum of the most psychomotor functions and physical capabilities (Geron & Mutafova - Zaberska (Герон & Мутафова-Заберска), 2004). This is the last stage of the educational process and the last chance for the sports pedagogues to cause, create and build at students a motivated interest, desire and readiness for an active lifestyle leading to the required degree of physical activity for maintaining good health for a life-time. At the same time at most Universities in Bulgaria the subject sport has no clear status. Rectors underestimate the importance of the physical activity and reduce the classes for sport from 60 hours for each

school year (Regulations for low for PE and sport (Правилник за прилагане на закона за физическото възпитание и спорта), 2003) to total workload of 60 or 120 for the entire 4 years period of studies. For example at Sofia University there are subjects which don’t provide sport to their students at all. If provided it’s only one time per week which is much less than the recommended at least three (Rachev et al (Рачев и кол), 1998). Most Universities don’t even have their own sport facilities. Theory is also not included as a part of the Physical education of the students in no one University in Bulgaria (Иванов, (Иванов), 2006).

The specific environment of sport classes at Universities place additional challenges to students. The physical exercise requires motivated attitude and determined efforts (Rachev et al (Рачев и кол), 1998). Thus the motivation is essential during physical activities. Each need raises a certain craving for it to be satisfied. The unity between the need and the aspiration determine the motive, but the incentives are those that determine the intensity of the manifestation of the motives (Игнатов (Игнатов), 2010). In the modern Psychology it is assumed that the induction of positive expectations can contribute to the emergence or strengthening of motivation (Geron & Mutafova - Zaberska (Герон & Мутафова-Заберска), 2004).

The aforementioned facts provoked us to seek new ways to increase students’ motivation for physical activities (Hristova (Христова), 2017).

### **METHODS**

The hypothesis of our study is based on the assumption that the development of a model for Physical Education in aerobic classes at Universities inducing positive expectations and including theoretical part will increase the students’ interest and activity for regular exercise which will increase the efficiency and quality of the classes.

Hence the purpose of our research was to study the impact of practical-theoretical model for Physical Education in university aerobic classes, aimed at increasing the students’ interest and motivation for physical activity.

In accordance with the thesis we asked the students beforehand what results they expect from the aerobics classes. We also gather information about the student's health and life style self-evaluation and their knowledge on the importance and benefits of regular physical exercises. Subject of the research were a total of 175 female students, in their 1st to 4th year of study at Sofia University "St. Kliment Ohridski", at the age of 19 to 23, enlisted in 7 aerobics groups.

In accordance with their expectations were formed two experimental groups (EG1 and EG2), each of which worked on aerobics complex with different focus during one school year (2015-2016). Each group consisted of 25 female students. Students were measured in two anthropometric variables (body high and body weight), nine tests applied for determination of physical abilities and interviewed about their health and activity habits.

To establish the efficiency of the developed model we tested some functional and physical abilities of the students, before and after the experiment. To analyze the received data we used the following Mathematical Statistics Methods (Gigova (Гигова), 2009):

- Questionnaire survey
- Descriptive statistics – analysis of variance;
- Statistical null hypothesis – Student's t-test;
- Non-parametric statistical hypothesis test - Mann–Whitney U test;
- Non-parametric statistical hypothesis test - Wilcoxon signed-rank test.

**RESULTS AND DISCUSSION**

For the purposes of this article we are introducing some parts of the analysis we've made on the data received from our study.

When asked how do they evaluate their health (Figure 1) a total

of 85,10% of the 175 students describe it as very good (32,98%) and good (52,12%). Also a total of 82,98% think that their life style is absolutely healthy (5,32%) and relatively healthy (77,66%) (Figure 2).

Figure 3 represents the self – reported frequency of physical activity. Most of the interviewed students (69,94%) exercise 1-2 times a month (45,47%) or don't at all (24,47%). Figure 4 gives students reports for experiencing different types of body pains/aches on daily bases. According the results, half of the 175 interviewed participants, declare that they have/feel pains/aches in the body constantly (17,67%) or time to time (32,33%) mostly in the back, neck and knees. As well-known untrained muscles are unable to maintain the proper position of the bones which is the main reason for the emergence of this pains at this young age.

Based on obtained parameters for body weight and body high, we calculated Body Mass Index (BMI) of the students at the beginning of the experiment and compered the results with the recommended by World Health Organization values. Referent values for BMI suggested from WHO are presented in Table 1.

Compared with results from our study, presented at Figure 5, the analysis showed that in contradiction with our expectations only 6,66% of the tested students are in condition of pre-obesity (Figure5). Most of them (61,13%) have normal weight but also many of participants in the study (32,21%) are underweight. These results are confirmed also in the study of Hristova (Христова) 2016, conducted year earlier. Having in mind that the majority of the tested students don't exercise on a regular basis this low body weight could be caused by two basic reasons: strict diet or the low mass of untrained muscles.

Table 2: Variance analysis of students' physical abilities

| physical performance |                        |         | min   | max   | R      | X      | S     | V%   | As    | Ex    |
|----------------------|------------------------|---------|-------|-------|--------|--------|-------|------|-------|-------|
| №                    | test name              | measure |       |       |        |        |       |      |       |       |
| EG1                  |                        |         |       |       |        |        |       |      |       |       |
| 1.                   | floor-touch test       | sm      | 32,0  | 62,0  | 48,20  | 48,20  | 9,24  | 19,2 | -0,32 | -1,21 |
| 2.                   | trunk/neck flexibility | sm      | 15,0  | 43,0  | 28,28  | 28,28  | 6,70  | 23,7 | -0,2  | 0,13  |
| 3.                   | push-ups               | max     | 0,0   | 28,0  | 14,64  | 14,64  | 7,11  | 48,5 | 0,03  | -0,12 |
| 4.                   | sit-ups                | 30 sec  | 8,0   | 20,0  | 14,88  | 14,88  | 2,80  | 18,8 | -0,16 | 0,07  |
| 5.                   | squats                 | 30 sec  | 15,0  | 28,0  | 20,92  | 20,92  | 3,03  | 14,5 | -0,05 | 0,51  |
| 6.                   | standing long jump     | sm      | 102,0 | 170,5 | 135,88 | 135,88 | 14,09 | 10,4 | -0,10 | 1,20  |
| 7.                   | 20 m sprint run        | sec     | 3,76  | 5,20  | 4,32   | 4,32   | 0,34  | 7,8  | 0,56  | 0,55  |
| 8.                   | HR in rest             | beat/m  | 63,0  | 80,0  | 71,20  | 71,20  | 4,68  | 6,6  | 0,21  | -0,82 |
| 9.                   | step test              | ml/kg/m | 30,35 | 36,26 | 33,18  | 33,18  | 1,95  | 5,9  | 0,01  | -1,07 |
| EG2                  |                        |         |       |       |        |        |       |      |       |       |
| 1.                   | floor-touch test       | sm      | 27,0  | 66,0  | 39,0   | 50,04  | 8,71  | 17,4 | -0,46 | 0,96  |
| 2.                   | trunk/neck flexibility | sm      | 24,0  | 50,0  | 26,0   | 31,60  | 5,02  | 15,9 | 1,92  | 6,85  |
| 3.                   | push-ups               | max     | 5,0   | 23,0  | 18,0   | 13,68  | 5,03  | 36,8 | -0,16 | -0,80 |
| 4.                   | sit-ups                | 30 sec  | 9,0   | 23,0  | 14,0   | 16,00  | 3,41  | 21,3 | 0,43  | -0,27 |
| 5.                   | squats                 | 30 sec  | 18,0  | 27,0  | 9,0    | 21,44  | 1,92  | 8,9  | 0,74  | 1,98  |
| 6.                   | standing long jump     | sm      | 98,0  | 189,0 | 91,0   | 140,76 | 20,66 | 14,7 | 0,05  | 0,47  |
| 7.                   | 20 m sprint run        | sec     | 3,80  | 4,66  | 0,86   | 4,08   | 0,21  | 5,2  | 1,24  | 1,81  |
| 8.                   | HR in rest             | beat/m  | 61,0  | 80,0  | 19,0   | 70,52  | 4,76  | 6,8  | -0,03 | -0,25 |
| 9.                   | step test              | ml/kg/m | 30,35 | 36,26 | 5,91   | 33,92  | 1,55  | 4,6  | -0,44 | -0,04 |

N=25, α = 0,05, As 0,05 = 0,927, Ex 0,05 = 1,803

Table 3: Recommended values for sit-ups (Davis, B. 2000: 124)

| Gender | Excellent | Above Average | Average | Below Average | Poor |
|--------|-----------|---------------|---------|---------------|------|
| Female | > 25      | 21 - 25       | 15 - 20 | 9 - 14        | < 9  |

Table 4: Recommended values for push-ups (McArdle, W.D. 2000: 418)

| Age     | Excellent | Good    | Average | Fair   | Poor |
|---------|-----------|---------|---------|--------|------|
| 20 - 29 | > 48      | 34 - 38 | 17 - 33 | 6 - 16 | < 6  |

Table 5: Recommended values for standing long jump (Hede, C. 2011: 178- 179)

| Age | Excellent | Above av.    | Average      | Below av.    | Poor    |
|-----|-----------|--------------|--------------|--------------|---------|
| >16 | > 1.91m   | 1.91 - 1.78m | 1.77 - 1.63m | 1.62 - 1.50m | < 1.50m |

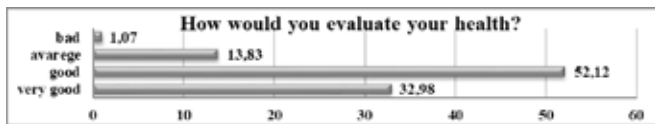


Figure 1: Self-evaluation of personal health

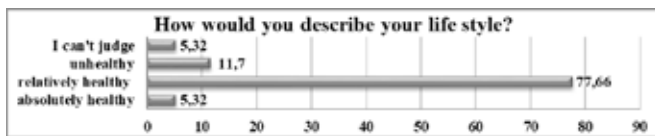


Figure 2: Self-description of lifestyle

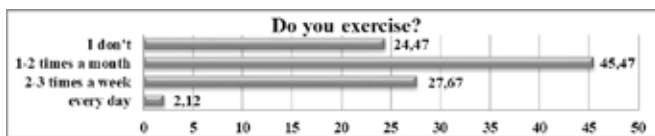


Figure 3: Self-reported frequency of physical activity

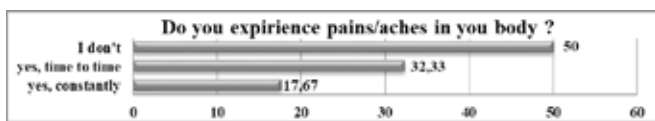


Figure 4: Self-reported experience of pains in body

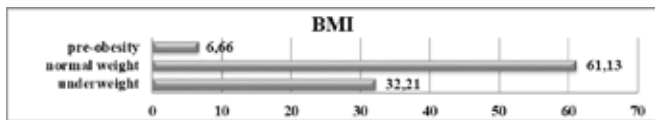


Figure 5: BMI distribution of participants in the study

Table 1: WHO description of BMI's values

| condition               | BMI          |
|-------------------------|--------------|
| severe undernourishment | < 16,0       |
| mild undernourishment   | 16,0 — 16,99 |
| light undernourishment  | 17,0 — 18,49 |
| underweight             | < 18,5       |
| normal weight           | 18,5 — 24,99 |
| overweight              | ≥ 25,0       |
| preobesity              | 25,0 — 29,99 |
| obesity                 | ≥ 30,0       |

Students were also tested in their physical abilities. Nine standardized motor tests for evaluation of flexibility, strength, explosive power, speed were applied. The results from the basic descriptive analyses and analysis of the variance of the received data are presented in Table 2.

The recommended values for each test, suggested by different authors are presented in Tables 3, 4 and 5. Comparing the average of our two groups with the recommended values for each test we ascertained that performance of our examiners for the most of the tests is below average or poor.

**CONCLUSIONS**

The students' answers to the questions and the variance analysis of their physical abilities, clearly mark out and confirm one of the major problems of our time – the massive immobilization of people. Totally 123 students from totally 175 respondents don't exercise at all or in the best case do it 1-2 times per month. The result is pains and aches throughout the body due to weak muscles, low fitness lev-

el, stamina and physical agility at the age when it is supposed to be the optimum of the most psychomotor functions and physical capabilities of a person. Similar results are obtained in the similar studies conducted by Zlatev (Златев), 2015; Hristova (Христова), 2016. As well-known in order to improve a poor physical condition is required at least three workouts a week. So the provided at the moment time for one sport class per week (if provided) is far from enough for the sport teachers to be able to perform this task.

And at the same time the contradictory views of the students indicate that their knowledge of the importance and benefits of regular exercise and conceptions for categories such as good health, healthy life-style and proper nutrition to a large extent is fragmentary and unclassified. We believe that if given the right information young people will be able to make the right informed decisions and reconsider their way of living.

Based on our results, we would like to suggest following recommendations:

- The University's Authorities in Bulgaria should seriously consider the meaning and benefits of raising healthy young generations for the future of our country. We recommend that there should be at least two sport classes per week in students' subject schedule.
- Sport Departments in Bulgaria should implement theory as a basic part of the process of Physical education of university students.

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Correspondence:  
 Petya Hristova, Ph.D.  
 Sport Department  
 Sofia University "St. Kliment Ohridski"  
 petya1973@yahoo.com  
 Mobile phone: +359878429842