CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.910583

Available online at: http://www.iajps.com Research Article

THE ASSESSMENT OF INTERRELATION OF STUDENTS' MOTION ACTIVITY WITH THE LEVEL OF SOMATIC HEALTH

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Abstract:

The article presents the results of the study of motion activity of students from different health groups and students of the Faculty of Physical Education, distinguished by prolonged motion regime during the school day. The survey was conducted among the students, who were included in the study, with the purpose of revealing the attitude of girls and boys towards their motion activity. Practical determination of the scope of motion activity with the help of pedometers was carried out at the next stage. This equipment allowed to define objectively the level of student's motion activity. In addition, in girls and boys, who took part in pedometer investigation, the level of somatic health was measured, according to the rapid assessment method of G.L. Apanasenko. Assessment of the level of physical health allowed to know how motion activity affects the body of students. Obtained data indicates the need for students to develop a positive attitude toward motion activity and to increase its level.

Keywords: *students, motion activity, somatic health, educational process.*

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Please cite this article in press as Andrey A. Tretyakov et al, ***the Assessment of Interrelation of Students' Motion Activity with the Level of Somatic Health****, Indo Am. J. P. Sci, 2017; 4(09).*

INTRODUCTION:

The modern progress of science and technology contributes to changing the correlation in the everyday, educational, labor activity of the person's mental and physical labor. The most clearly this process can be seen in the educational process of schoolchildren, students and teachers. The total volume of study load increases in the educational process. In addition, the content of education programs increases, leading to a significant increase in the independent work of students. The foregoing, in turn, contributes to a reduction in motion activity almost in half [1-3].

The number of current studies indicates, that almost 50% of students in Russian universities, have deviations in the state of health [1, 2, 4]. The existing volume of motion activity of schoolchildren and students does not afford the full development and functioning of the organism.

One of the main places in society is the problem of forming a healthy generation. Its development at the present stage is characterized by complex socio-economic changes, which declare the need for early solution of the problem of preserving the health of the population, as indispensable component of human life, which has an enduring value [2, 4, 5].

Therefore, we faced the problem of studying the relationship between the level of somatic health of students and their real motion activity. The investigation of this relationship should be conducted among students of the basic, special medical groups and students of the Faculty of Physical Education. The study of motion activity will allow us to compare and see how the active motion activity in the study time allows to cope with the negative aspects of the educational process. But in the literary sources, we have not found any investigations, aimed at studying and comparing motion activity of students of various specialties. As a result, the use of motion regimes, offered by specialists, can be effective, for example, for the students of humanitarian direction and ineffective for scientific or technology directions.

All this allowed forming the research goal - to study the relationship between the level of somatic health and the motion activity of students.

MATERIAL AND METHODS OF THE RESEARCH:

Three groups were formed on the basis of Belgorod State National Research University: MMG (main medical group), SMG (special medical group) and FPE (Faculty of Physical Education). All students were the 2nd year of education. The main medical group consisted of students, who had no restrictions on physical education classes (20 girls, 18 boys). Students with limitations during sports lessons (19 girls, 20 boys) were included to special medical group. The goal to distinguish students by nosological groups was not pursued. In the future, such studies are expected. The group of Faculty of Physical Education included 15 girls and 20 boys.

The survey in the form of questionnaires was used in the investigation. It allowed knowing the opinion of girls and boys about their motion activity. Actually, the motion activity was measured by the OMRON HJ-203 pedometers. The level of somatic health was determined by the express methodology according to G.L. Apanasenko. This technique included body mass index, life index, force index, recovery time of heart rate after 20 sit-ups, Robinson index and total score, based on index results.

RESULTS OF THE RESEARCH AND THEIR DISCUSSION:

The features of students' motion activity and the opinion about it in the investigation were determined by means of questionnaire. 200 students participated in the survey - 100 girls and 100 boys. The results of the questionnaire are presented in Table 1.

Table 1: The results of students' survey.

Questions of the survey	Girls			Boys		
	FPE	MMG	SMG	FPE	MMG	SMG
How many hours do you spend at the university on average per week?						
- less than 30 hours	16%	26%	8%	14%	14%	12%
- 30-48 hours	76%	60%	82%	82%	72%	74%
- 48 hours or more	8%	14%	10%	4%	14%	14%
How many hours do you additionally engage in educational activities outside the university on average per day?						
- less than 2 hours	20%	26%	26%	42%	34%	46%
- 2-4 hours	68%	60%	60%	46%	34%	32%
- 4 hours or more	12%	14%	14%	12%	32%	22%
How do you get from home to the university? Do you mostly walk or take some transport?						
- by walking	36%	24%	20%	28%	26%	26%
- more often by walking	12%	4%	2%	30%	8%	6%
- by transport	36%	60%	52%	28%	48%	58%
- more often by transport	16%	12%	26%	14%	18%	20%
How much time do you move on average per day?						
- less than 1 hour	2%	4%	4%	0%	4%	2%
- 1-2 hours	10%	16%	16%	14%	18%	26%
- 2-3 hours	20%	30%	28%	24%	30%	26%
- 3-5 hours	32%	20%	34%	30%	18%	20%
- 5 hours or more	36%	30%	18%	32%	30%	26%
Do you do any kinds of physical exercises (in addition to physical training at the university)?						
- yes	56%	24%	18%	54%	40%	46%
- sometimes	32%	50%	50%	44%	48%	42%
- no	12%	26%	32%	2%	12%	12%
If you do physical exercises additionally:						
A) the nature of such training:						
- under the supervision of specialist	82%	20%	12%	86%	8%	12%
- independent	18%	80%	88%	14%	80%	76%
B) how many hours do you spend on such training on average per week?						
- 1-2 hours	4%	22%	20%	4%	36%	52%
- 2-3 hours	20%	20%	18%	28%	40%	32%
- 3-4 hours	48%	22%	20%	26%	14%	6%
- 5-6 hours	28%	6%	6%	42%	10%	10%
What type of rest do you prefer?						
- active	46%	22%	24%	48%	4%	14%
- passive	0%	4%	6%	8%	74%	12%
- mixed	54%	74%	70%	44%	22%	74%
In your opinion, is your motion activity sufficient for you?						
- yes	30%	22%	16%	48%	22%	28%
- rather yes	40%	40%	26%	34%	34%	34%
- no	6%	10%	16%	8%	14%	12%
- rather no	24%	28%	42%	8%	14%	20%

From the results, presented in the table, it can be seen, that the study load of the students is generally the same and is amounted to 30-48 hours. The time, spent on independent work, mainly among students of MMG, SMG and FPE, was, for the most part of respondents, 2-4 hours per day. Despite the fact, that the students have the same study load, the students of FPE prefer to get to the university on foot and move throughout the day. It is interesting, that SMG students move more during the day, than the students of the MMG group. More than a half of the interviewed boys and girls of FPE regularly engage in physical training and sports outside the university. As an obligatory condition of such activity, they allocate the training under the supervision of specialist. Students of other groups are engaged mainly

"sometimes" and independently, which is not desirable for boys and girls without physical education. Most of the surveyed students prefer a mixed type of rest. Although MMG girls prefer passive rest. Despite all the above, most students believe, that their motion activity is sufficient for them. The exception was the boys from SMG: 42% of the respondents indicated, that their motion activity rather does not correspond to a sufficient rate.

Further, among the students interviewed, boys and girls, who took part in pedometer investigation were randomly selected. This study was conducted during the week. The results are shown in Table 2.

Comparison of the results showed, that the recommended rate of 10,000 steps per day was performed only by FPE students, both girls and boys. The lowest motion activity was among the SMG students. Despite physical training lessons, held on Tuesday and Thursday, the motion activity of girls and boys from MMG and SMG was no more than 10,000 steps. The obtained results once again emphasize, that the activity of students suffers, both from the educational process, and from the low level of interest in physical training.

At the final stage, students, who took part in pedometer investigation were assessed by the level of somatic health, according to the method of G.L. Apanasenko. The results are shown in Table 3.

Table 2: The results of pedometer investigation of the students.

Day of the week	Girls			Boys		
	FPE	MMG	SMG	FPE	MMG	SMG
Monday	11321±102	7659±768	6750±341	11279±608	9607±500	8178±391
Tuesday	12236±337	8189±1829	7093±398	12329±329	9522±494	7951±459
Wednesday	11975±189	6041±1059	6832±560	13690±1017	9689±257	9118±232
Thursday	12048±432	8465±1270	7905±435	17449±1459	10333±309	8476±163
Friday	12655±583	8399±1791	6544±510	14665±1291	9512±256	8512±415
Saturday	12955±405	8855±1486	5527±502	15386±1462	8241±950	6241±633
Sunday	12105±538	7953±1680	6105±425	14116±743	8676±495	6962±276
Average per week	12185±202	7937±347	6700±201	14130±645	8777±142	7920±94

Table 3: The results of measurement of the somatic health level

Indices		Girls			Boys		
		MMG	SMG	FPE	MMG	SMG	FPE
		x ± m	x ± m	x ± m	x ± m	x ± m	x ± m
Body mass index		16.7 ± 0.37	16.78 ± 0.71	33.93 ± 0.84	20.2 ± 0.21	20.09 ± 1.9	40.77 ± 0.57
	points	-1.5 ± 0.13	-1.29 ± 0.36	0.5 ± 0.25	-0.1 ± 0.07	-1.00 ± 0.71	0.5 ± 0.10
Life index		55.6 ± 1.27	53.49 ± 3.46	58.7 ± 0.95	60.9 ± 0.95	55.19 ± 4.70	64.2 ± 0.55
	points	2.1 ± 0.18	1.57 ± 0.43	4.30 ± 0.36	2.64 ± 0.10	1.00 ± 0.71	3.13 ± 0.59
Force index		37.6 ± 1.13	39.41 ± 1.42	44.27 ± 3.54	55.9 ± 1.24	54.62 ± 4.98	61.40 ± 3.15
	points	-0.69 ± 0.08	-0.57 ± 0.20	0.83 ± 0.12	1.46 ± 0.16	0.00 ± 0.58	1.57 ± 0.69
Recovery time of heart rate after 20 sit-ups		71.8 ± 3.18	98.57 ± 22.41	80.00 ± 2.10	90.0 ± 3.24	135.0 ± 8.66	107.0 ± 0.07
	points	4.2 ± 0.21	2.71 ± 1.32	4.20 ± 0.23	2.6 ± 0.26	2.00 ± 0.58	3.73 ± 0.15
Robinson index		89.5 ± 2.41	89.34 ± 10.24	98.80 ± 8.16	109.2 ± 2.57	81.69 ± 8.66	100.43 ± 2.03
	points	0.03 ± 0.18	-0.14 ± 0.59	2.27 ± 1.18	-1.0 ± 0.13	1.75 ± 0.38	2.90 ± 0.75
General assessment of health level		4.15 ± 0.25	2.29 ± 1.91	11.97 ± 2.16	5.6 ± 0.34	3.25 ± 0.20	9.67 ± 0.44

The results in the table indicate, that the level of somatic health in girls and boys from SMG is low. It seems, that the obtained result is a combination of the impact of students' chronic diseases and the negative aspects of educational process at the university. The results of MMG students were slightly higher, but their nature did not reflect the positive side of the situation. The level of health of girls and boys was lower than average. In the group of FPE students the level of somatic health is much higher, than in the other two groups. But in relation to the fact, that the students of the sports faculty should be with a high level of health, the obtained data do not confirm this. The level of physical health corresponds to the average in this group.

DEDUCTIONS

The research, which was conducted to analyze the relationship between the somatic health and motion activity, revealed that the level of motion activity is affected not only by the educational process, but also by the students' attitude to motion activity, the presence of deviations in health. Further, it is necessary to expand the range of evaluated factors in order to present the results, characterizing the level of motion activity, more accurately.

When assessing the level of physical health, the general trend can be traced both in girls and in boys. The health level was the lowest in SMG, slightly higher in the MMG group and significantly higher among the students of FPE. But these results correspond only to the average level, but not to the high, as expected.

The analysis of the relationship between these indicators shows, that despite the high motion activity in the FPE group, the somatic health corresponds only to the average level. The motion activity in the other groups (MMG and SMG) did not exceed the average daily rate. On some days it was even 2 times lower, than the norm. The level of health in these groups corresponds to "low" and "below average". Apparently, the motion activity serve as supporting factor in the state of somatic health.

Motion activity is the basic component of human activity. And in relation to any kind of activity, it must be high, in order to form a high level of health. It is important to take into account the motivation of students in this issue. It could not be said, that if the students of FPE, were in such strict limits of the educational process, as the students of MMG and SMG, they would moved more. But it is important, that the students of pedagogical specialties take this issue seriously enough, because they will teach new generations, which must know about the importance and significance of motion activity.

CONCLUSIONS:

1. Based on the results of modern investigations of A.A. Gorelov, V.L. Kondakov, A.N. Usatov, V.N. Usatov, D.V. Shcherbin and our own research, we believe, that in the implementation of tasks to improve the level of somatic health and efficiency of student youth, the motion activity plays a leading role.

2. In our study it was possible to see how closely the motion activity and somatic health of students are interconnected; how the level of motion activity is associated with training activities and is reflected in the level of physical health of girls and boys; how the level of physical health is conditioned, both genetically and by acquired tastes and motives, manifested in the motion regime of the day and physical activity.

3. As noted in the work of many scientists, the search for the most acceptable means of regulating the motion activity of modern young people should be based on the analysis of characteristics and criteria, reflecting the various aspects of growing person activity. Means of physical training and sports as much as possible cover the expected characteristics and criteria of the motion sphere of student youth.

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