



---

## THE ROLE OF FITNESS IN RELIEVING POSTURE STRESS

Ofelia POPESCU<sup>1</sup>  
Nicoleta LEONTE<sup>2</sup>  
Adrian PRICOP<sup>3</sup>

---

### Abstract

*Postural stress, in the higher education students, is to maintain for a long time an incorrect body position during study, while participating in courses, etc. Maintaining a long-term postural position in inappropriate conditions can lead to the emergence of poor attitudes. Incorrect attitudes alter the work ability thereby leading to decreased productivity and lowering the quality of the work. The ability to work is the "ability (physical, mental, cerebral, nervous) to perform a maximum quantity of work" (6).*

*Work positions that are maintained for a long while in an incorrect attitude lead to muscles blockage, witch occurs during work. Simultaneously with this block, pains and muscle stiffness in the spinal muscles appear. There will appear headaches backaches, dizziness, osteo-musculoskeletal diseases. Blocking the muscles in the chest will cause a decrease in oxygen supply, which will generate decreased alertness and concentration. This correct posture is "an important component of health and adequate training to respond to individual demands of everyday life" (7). The activities performed by students in physical education and sports classes, "are related to the idea of improving the physical qualities, reinforce proper posture, relaxation and socialization"(1).*

**Keywords:** fitness, posture, students.

**JEL classification:** I.20, I.23

---

### Introduction

Postural stress, in the higher education students, is to maintain for a long time an incorrect body position during study, while participating in courses, etc. Maintaining a long-term postural position in inappropriate conditions can lead to the emergence of poor attitudes. These attitudes will be the basis for installation of "diseases which elicit osteo-musculoskeletal symptoms"(5). Incorrect attitudes alter the work ability thereby leading to decreased productivity and lowering the quality of the work. The ability to work is the "ability (physical, mental, cerebral, nervous) to perform a maximum quantity of work" (6). "Professional activities and in particular the prolonged and incorrect daily positions determine a gradual degradation attitudes."(4).

Work positions that are maintained for a long while in an incorrect attitude

---

<sup>1,2,3</sup> University POLITEHNICA of Bucharest, E-mail: ofeliapopescu2002@yahoo.com,  
Telephone: 0721377505



lead to muscles blockage, which occurs during work. Simultaneously with this block, pains and muscle stiffness in the spinal muscles appear. By blocking the muscles, the blood vessels are compressed such as there is no more nutrient transport needed to sustain the effort. There will appear headaches backaches, dizziness, osteo-musculoskeletal diseases. Blocking the muscles in the chest will cause a decrease in oxygen supply, which will generate decreased alertness and concentration. "Adopting poor postures while working and maintaining them for a long time: this may initiate real crises of the posture ... Body's natural position is lost if it is maintained for a long time a poor position, so that the postural reflexes are deteriorated by fatigue of the muscles involved." (3).

This correct posture is "an important component of health and adequate training to respond to individual demands of everyday life" (7). The activities performed by students in physical education and sports classes, "are related to the idea of improving the physical qualities, reinforce proper posture, relaxation and socialization"(1).

### **1. Assumptions**

It is assumed that the responses of subjects (young technical higher education students) applied to the questionnaire, will highlight the knowledge of their own condition of posture. At the same time, there will be collected data about the subjects' desires of improving the deficient attitudes. It is assumed that the motion type they prefer to practice during sports activities will be highlighted in the course of physical education and sport.

The research methods used were: bibliographic study, direct observation, questionnaire, statistical method and graphical method. Research shows (in a first phase) the opinions of the students from the University "Politehnica" of Bucharest, about their own knowledge of the condition of correct posture and their preferences for the type of movement that they would like to practice to correct any deficient attitude.

The purpose of the present study is to investigate the sport activities which subjects are disposed to practice in physical education and sports classes for relieving stress and attitudes deficient posture. This was achieved through a questionnaire that was based on closed questions (with single answer and multiple answer) and open questions.

Subjects who responded to the questionnaire are students (male and female) from the Faculty IMST (32), Automation and Computers (27) and SIM (18). The volume size was 77 students of UPB, of which 56 male and 21 female, aged between 19 and 21 years. Interviews were conducted face to face, in the sports hall of the U.P.B. After completing the questionnaire the somatoscopic evaluation was performed. Data collection was realized in between 23.03.2015-10.04.2015, followed by processing and interpretation of responses, from 11 to 20 April 2015. Interpretation of results was made based on data collected from respondents to the first items of the questionnaire.



## 2. Results

The opinions of the students regarding their own correct posture are centralized and are shown in percentages in Table. 1 and the graphical representation of this table is described in Chart 1.

**Table 1. The opinions of the students regarding their own correct posture**

Nr. subjects	Male	Female	Correct posture	Male	Female	Deficient attitude	Male	Female
77	56	21	62	53	9	15	4	11
100%	72.72%	27.27%	80.51%	68.84%	11.68%	19.48%	5.19%	14.28%

**Chart 1. The opinions of the students regarding their own correct posture**

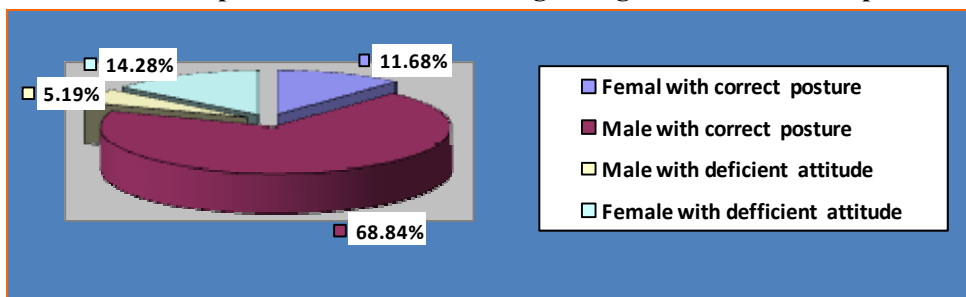


Table 1 shows that, out of 77 male and female who responded to the questionnaire, a total of 62 (80.51%) consider that their attitudes are correct; of these, 53 were male and 9 female. Those who believe they have a poor attitude are 15 (19.48%), 4 were male students and 11 female students. Of all the respondents, 14.28% is the percentage of female students who consider their own posture as incorrect and a percentage of 11.68% have a good opinion about their posture. Percentage of male students who have a good opinion about their posture is 68.84%. Those who think they do not have good posture represent a percentage of 5.19%. The responses of the students which considered to have a poor attitude, were centralized and shown in Table 2 and are shown in Diagram 2.

**Table 2. The opinions of the students regarding their poor attitudes of the spine**

Nr. subjects	Male	Female	Cifoza attitude	Male	Female	Lordoza attitude	Male	Female
15	4	11	12	4	8	3	0	3
100%	26.66%	73.33%	80%	26.66%	53.33%	20%	0%	20%



**Chart 2. The opinions of the students regarding their poor attitudes of the spine**

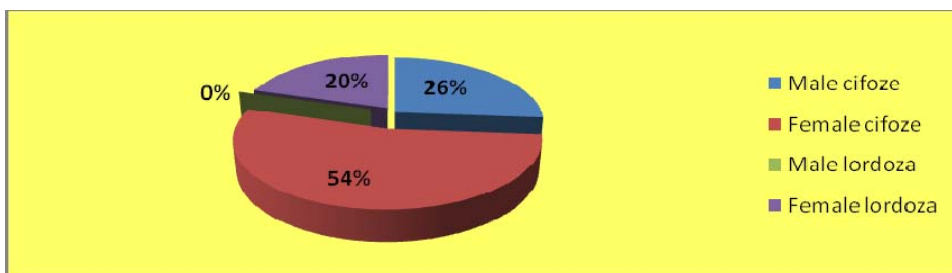


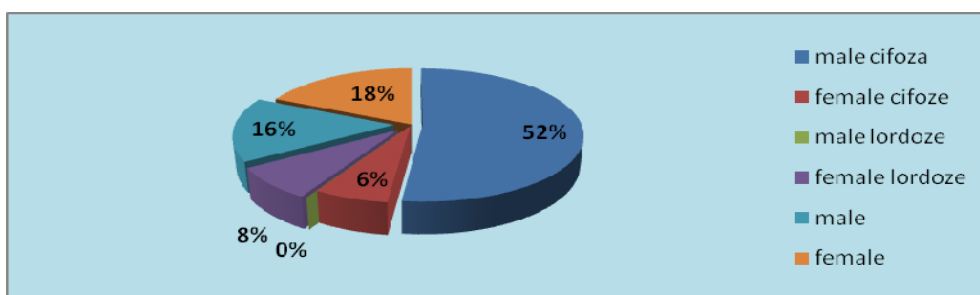
Table 2 and Chart 2 submit the opinions of the students on poor attitudes that each student believes that he has. To this item are responding a number of 15 students (4 male students and 11 female students). In their opinion, 12 of the subjects presented cyphotic attitudes (80%), and 3 lordotic attitudes (20%). Of those, 8 are female students (53.33%) and 4 male students (26.66%). Of the total number of those who are answered this question 73.33% are female students and 26.66% are male students. Increased percentage of female students think that shows cifotic attitudes, compared to the male students, show higher levels of awareness of their corporal attitudes and increased interest in their own image, especially the body.

Table 3 and Diagram 3 show the real poor attitudes centralized after somatoscopic examination of the spine.

**Table 3. Poor attitudes revealed after somatoscopic examination of the spine**

Nr. subjects	Cifoza attitude		Lordoza attitude		Without poor attitudes		
	Male	Female	Male	Female		Male	Female
77	56	21	40	5	26	12	14
100%	72.72%	27.27%	58.44%	11.11%	33.76%	46.15%	53.84%

**Chart 3. Poor attitudes revealed after somatoscopic examination of the spine**



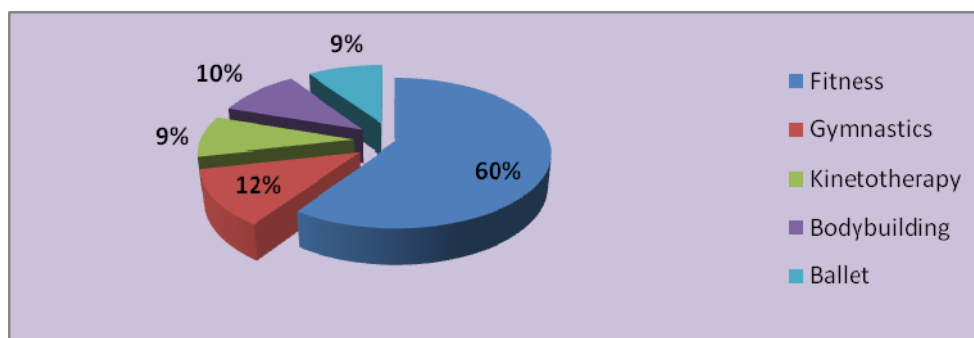


Of the total number of subjects (77), 45 (58.44%) are cyphotic attitudes, 6 (7.79%) have lordotic attitudes and 26 (33.77%) are subject to without poor attitudes. 40 male students have cifotic attitudes, representing 88.88% of all students who have this attitude. Female students, 5 of them, represent 11.11% of those who have an cyphotic attitude. Lordotic attitude was highlighted to female students only (6). Of those without problems, 12 are male students (46.15%), and 14 are female students (53.84%). Table 4 and Chart 4 centralized and shown in percentages subjective opinions about the types of movement that they would choose to improve the poor posture.

**Table 4. Students' options for the types of physical activities that they would practice to improve poor attitudes**

Subjects	Physical activities				
	Fitness	Gymnastics	Kinetotherapy	Bodybuilding	Ballet
<b>M</b>	<b>52</b>	<b>4</b>	<b>3</b>	<b>10</b>	<b>0</b>
<b>F</b>	<b>17</b>	<b>10</b>	<b>7</b>	<b>2</b>	<b>11</b>
<b>Total</b>	<b>69</b>	<b>14</b>	<b>10</b>	<b>12</b>	<b>11</b>

**Chart 4. Students' options for the types of physical activities that they would practice to improve poor attitudes**



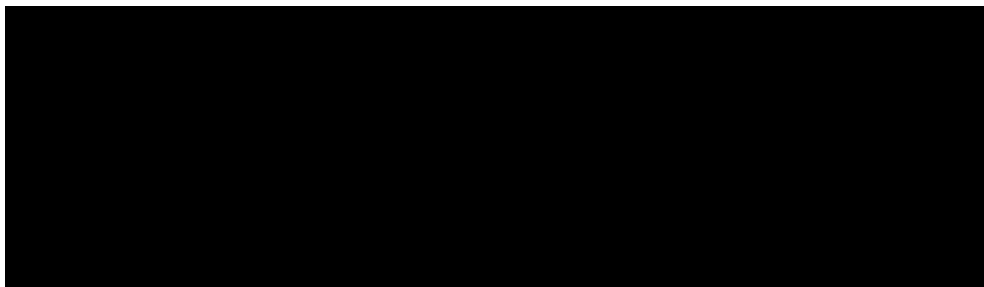
The subjects chose several types of physical activities to practice for the correction of the deficient attitudes. 52 male students and 17 female students chose fitness exercises. 7 female students and 3 male students opted for kinetotherapy exercises and 4 male students and 10 female students opted for gymnastic exercises. There were expressed 12 options for bodybuilding (10 male students and 2 female students) and 11 female students options for ballet.



**Table 5. Comparative analysis between students' opinions about their correct posture and somatoscopic examination**

Posture	Own opinions		Somatoscopic examination	
	Nr. subjects	%	Nr. subjects	%
Deficient posture	15	19.48	51	66.23
Correct posture	62	80.51	26	33.76

**Chart 5. Comparative analysis between students' opinions about their correct posture and somatoscopic examination**



Comparing students' opinions about their correct posture with somatoscopic examination that shows the following:

- Own poor posture is perceived by subjects only in proportion of 19.48% (15 subjects), compared to 66.23% (51 subjects) as is clear from somatoscopic examination;
- Correct posture is, in the subjective opinion, held by a number of 62 male and female students (80.51%) compared with 26 subjects who have really good posture, emerged from making the somatoscopic examination (33.76%).

### 3. Discussions

After processing the collected data the following conclusions arise:

- Students opinions regarding their posture is denatured. Subjects have a very good opinion about their own posture, which is not according with reality. A total of 53 male students and 9 female students believe that they have a good posture (80.51%) and only 4 male students and 11 female students (19.48%) believe that they have at least one poor attitude.
- Somatoscopic examination brings into focus the reality that only 26 students - 12 male students and 14 female students (33.76%) have a correct body posture. The remaining 51 subjects - 40 male students and 11 female students (66.23%) have at least one poor attitude.
- The awareness of the true level of correctness of positions determined subjects to choose the type of physical activity which they would practice



in physical education classes to correct these deficiencies. Subjects could choose the type of activity that seemed most appropriate to solve the problems of posture. They could choose one or more types of activity, or could propose their own type of exercises. Most requests were made for fitness activity type (69), then physiotherapy (10) bodybuilding (12), gymnastics (1) and ballet (5).

#### 4. Conclusions

Physical activity has important implications at professional stress symptoms decrease. Physical exercises have a strong influence, a compensatory effect, on the postural stresses. Exercise programs can be both prophylactic and for the recovery. Exercise programs can be both prophylactic and for the recovery. These latter are aimed at restoring some functions diminished or increased functionality in various sufferings, maintaining a functional level increased and the development of compensatory mechanisms.

Fitness gym type exercises and kinetotherapy exercises aim to improve the tonus in the muscles of posture. In this way, through specific exercises mentioned types of activity, is achieved a longer correct maintenance of posture while working.

In this context, the awareness of their own posts, the implications deriving from deficient posture, and the types of physical activities that can provide support for recovery deficient bodily attitudes, are very important for young students. Reducing the postural stress by toning the muscle and by activating the compensatory muscles, has as finality the elimination of fatigue and increase work efficiency.

Maintaining correct postures during daily activities (whether physical, intellectual, social, etc.) leads to increased capacity for work and optimizing the effort to achieve this.

#### REFERENCES

1. Drăgulin, I., coord., *Considerații ale studenților din învățământul superior tehnic privind diversificarea activităților corporale din orele de educație fizică și sport prin îmbunătățirea bazei materiale sportive*, U.P.B., București, 2012
2. Drăgulin, I., *Mișcare pentru sănătate psiho-fizică*, București, Ed. Printech, 2004
3. Drăgulin, I., *Activitatea fizică și capacitatea de muncă*, U.P.B., București, 2003
4. Leonte, N., Popesu, O., *Importanța dezvoltării somato-funcționale în profilaxia deficiențelor atitudinale ale studenților din învățământul superior tehnic*, U.N.E.F.S., 2012
5. Oțelea, Marina, *Medicina muncii*, Medicover, Ed. Cariere, București, 2005
6. Rapaș, L., Vlădoiu G., Tudor, I., *Studiu privind noi abordări ale stresului în relație cu munca*, Direcția de Sănătate Publică, București, 2004.
7. <http://www.scribube.com/timp-liber/sport/lucrare-de-atestat-educatia-fi25851.php>
8. <http://www.kestionare.ro/Presentation/Examples.aspx>