Study on the Importance of Physical Education in Fighting Stress and a Sedentary Lifestyle among Students at the University of Bucharest

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Abstract

It is widely accepted that stress and lack of exercise – these scourges of the modern era – increasingly affect more people, regardless of age, education, occupation, so these aspects of life have lately become a concern and research topic of great interest.

In the present study we aim at identifying the extent to which young people, students at the University of Bucharest, are affected by these "diseases" and to establish a relationship between participation in physical education classes and the perceived stress and lifestyle of these socio-professional categories.

The findings of our research come to strengthen other research conclusions on the same topic, namely that sports practiced in an organized way, led by a specialist in a pleasant environment, with efficient means, adapted to the particularities of the subjects’ age, is an extremely useful "weapon" in fighting stress and a sedentary lifestyle.

Keywords: stress, sedentary lifestyle, physical education in higher education

1. General considerations

The spectre of stress and a sedentary lifestyle – considered to be the "diseases of the century" – is spreading, unfortunately, more and more in a category of people who should be characterized by dynamism, a zest for life, exuberance. In reality, these scourges are a challenge for young people who, in their wish to properly adjust to the requirements of "the Century of Speed" fail to manage efficiently their low free time budget and to give themselves at least a few moments dedicated to sporting activities, whose positive influence on the body’s...
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systems and functions, as well as on the mind, are well known. The literature describes several types of stress, such as: physical, psychological, biological, cybernetic and sociometric. There are many definitions and meanings of the term stress. Paul Popescu Neveanu (1978), for instance, identifies the following meanings:

- stress is a situation or stimulus that puts the body in a state of tension;
- stress is the very special tension due to which the body mobilizes all its defensive resources in order to be able to face physical or psychological aggression.

It is a well known fact that, whatever the type of stress we are dealing with (physical, mental, chemical), it will affect all the systems and organs in the body, generating disorders, with mental activity as the "super integrator".

There are also several definitions of psychological stress, among which we mention here that of Golu (1981), according to whom it is a state of tension, tension and discomfort caused by agents with the negative significance of frustration or by the repression of motivational states (needs, desires, aspirations), due to the difficulty or impossibility of solving problems.

It is generally accepted among experts that a certain amount of stress is essential for life and can be our ally if we know how to manage it. If, however, the level of stress in our lives exceeds normal rates, it can become a (mental and physical) health issue. Regarding physical health, the effects of stress factors can include: poor physical condition, low general motility indicators, inappropriate operation of the main body systems, low parameters of physiological indices indicating a state of exhaustion, incorrect posture. Regarding mental health, there is frustration, low mobilization of energy, poor self-esteem, negative thoughts, anxiety, depression, lack of strong motivation etc.

From a biological perspective, it was demonstrated that the body's reaction to the action of stress factors is the release of hormones such as adrenaline, noradrenalin, cortisol, that are designed to prepare the body to handle unusual situations by increasing heart rate, blood pressure, muscle tone, stimulating the body to cope with these challenges. However, this ability decreases the body's reaction over time, thus creating the premises for installation of diseases.

It is recognized that from a medical perspective, physical activity is not the best way to combat stress, but it is also known and accepted that it can improve its symptoms.

Appropriately developed exercise programs can help people under stress use up excess energy, release frustration, they can contribute to reducing anxiety, depression, distrust, loneliness, and the lack of interest in everything around (Grigore, 2007).

Clinical and experimental studies have shown that physical training of a moderate intensity, whether of a long or short duration, can produce a significant decrease of anxiety, the effect persisting possibly for a period of 4-6 hours. Another positive influence of moderate exercise is the reduction of phobic syndromes. It is believed that physical effort is involved in reducing anxiety as it competes with the perception of the symptoms of anxiety and helps subjects modify their outlook on the professional or social difficulties they have to face (inducing a euphoric effect).

Another gain generated by physical activity in relation with the reduction of depression is that it removes inactivity and the state of apathy, boosting self-confidence.

Exercise acts on the central nervous system by inducing a state of wellness. It was noted that this phenomenon occurs in about 70% of the long-distance runners. This feeling of relaxation was documented not only by the athletes’ reports, but also by electrophysiological measurements that have demonstrated a decrease in spinal activity and synchronization between the two brain hemispheres. It was shown that an increase in body temperature also plays an important role in acquiring this state of wellness and relaxation.

The other element of interest for us, sedentary lifestyle, is manifested first by a reduction in the amount of movement at work, as well as in various everyday activities, which translates into a significant reduction in the volume and intensity of exercise. Experiments have shown (Scribgrup, 2013) that the absence or significant
reduction of physical effort, even in exceptional conditions of environment and food, lead to a significant loss of chemical elements such as nitrogen, sulfur, phosphorus, calcium, potassium and sodium.

The human body is not a "battery" that, in the absence of physical effort, will "store" the energy resulting from the metabolism of food and convert it into mechanical work at a later time. The lack of exercise, of functional effort, will push the body into a state of involution, atrophy, characterized by progressive "melting" of the protein tissue (muscle) and a gradual accumulation of fat.

Some of the most common disorders caused by inactivity are listed below:

- poor functional respiratory capacity, reflected by decreased vital capacity and insufficient pulmonary ventilation. This leads to poor oxygenation of cells and tissues, incomplete combustion of energetic substances and the creation of intermediate metabolic products, moodiness and loss of physical form;
- poor functional capacity of the cardiovascular system, manifested in a rapid pulse and high blood pressure at rest, cardiac fatigue, decreased blood circulation;
- unaesthetic fat deposits, regional or general obesity;
- reduction of physiological excretion and tendency to form urinary calculi (stones) due to the elimination of increased quantities of calcium;
- degenerative disorders of the osteoarticular system with the advent of spondylosis and arthrosis;
- signs of increased irritability, due to disturbance of the cortical processes of balance between inhibition and excitation and disorders in the sleep-wake mechanism.

The main means to combat this scourge is movement in its best organized, adapted and balanced form in order to obtain the expected efficiency - namely exercise.

Exercise contributes to the prevention of degradation and biological degeneration and increases the body's ability to counteract some tensions. The influence of exercise on the body can be felt not only for the organs and functions currently required for effort. Cumulatively, through repetition, it helps the body achieve morphogenetic and physiological gains, with tonic effects on vigor and health. In contrast to this, body immobilization leads to atrophy, with the body being trapped in a "vicious circle" of inactivity (Dinca, 2006).

The influence of exercise on the locomotor, respiratory, cardiovascular and other systems and its influence on digestion, nutrition, excretion, but especially on the nervous system and on mental activity is stimulating, exercise being essential for life and for balance and harmony in human life.

People have become widely aware of the positive role of physical exercise on health; consequently, in some countries, about 6 in every 10 citizens have started using a part of their free time to practice physical exercise.

In general, a program to combat sedentary lifestyle is easier to perform at the individual level and it allows optimal management of free time. Particular attention should be paid to the environment where exercise is performed, which means that open, peaceful, well-lit and ventilated spaces are to be preferred (www.orice.info).

In the process of their development, human beings tend to improve their physical, intellectual and moral characteristics in order to become a socially useful person. Therefore, they are always concerned about their health, their capacity to work, and in this context they understand the need to get more exercise and practice sports on a regular basis (Bota, 2006).

Through the specific objectives it pursues, physical education in higher education has a special place in the range of subjects included in the curriculum, as it also contributes, along with the fundamental subject matters, to the complete and complex preparation of future specialists.

Physical education is included in the curriculum of each faculty within the University of Bucharest as an optional course with a 100-minute class per week. Groups are made up based on the students' options for a particular sport.
2. The purpose of the paper

This paper aims to suggest that the sports/physical activities practiced within the Physical Education classes included in the curriculum at the University of Bucharest are a good alternative to combat a sedentary lifestyle. Another purpose of our paper is to try and establish the relationship between the frequency and quality of exercise practiced by students and their perception of stress factors.

As the last phase in the educational system, higher education provides an excellent environment where the young people’s biological potential and inclination for exercise can be actively developed, preserved and revitalized.

3. The research hypothesis

In our investigation we plan to verify the following assumption:

- there is an inverse relationship between the frequency of participation in physical education classes and perceived stress and the students’ state of wellness is directly proportional with the index of physical activity as an indicator of lifestyle.

4. The research methods

To identify the level of perceived stress, the level of the physical activity index and the motivation for attending physical education classes, a study was carried out by the method of investigation. The investigative technique used is the questionnaire.

The "Perceived Stress Scale" developed by Sheldon Cohen and Gail Williamson (1988) is one of the commonly used tools to measure perceived psychological stress, i.e. the extent to which situations in one's life are rated as being stressful. The items were designed in such a way as to reveal how unpredictable, uncontrollable and overloaded the subjects' lives were, according to their own descriptions. Moreover, the questions were general in nature, and therefore could be applied to any population subgroup. Questions related to the feelings and thoughts of the participants during the last month. High scores reflected high levels of stress.

Data were tabulated and processed using the statistical and mathematical method and the graphical method.

5. The research sample

The investigation included a total of 50 students of which 28 girls and 22 boys enrolled in various faculties of the University of Bucharest, who chose table tennis, aerobics and basketball for their classes, and it was carried out in the interval 18-22 March 2013.

6. Research results and their interpretation

In what follows we shall present the results of our investigation in a statistical and graphical form (Tables 1-2) as well as their interpretation (Fig. 1):

Table 1. Distribution of subjects according to their perceived stress

<table>
<thead>
<tr>
<th>The level of stress</th>
<th>Stress level below average</th>
<th>Average stress (global score between 13 and 20)</th>
<th>Stress above average (overall score 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls (N=28)</td>
<td>14.29% (N=4)</td>
<td>39.28% (N=11)</td>
<td>46.43% (N=13)</td>
</tr>
</tbody>
</table>
It appears from the analysis of the results that the average level of perceived stress for the subjects investigated is 16.85, this score falling within the range of "average stress". We can also notice that a high percentage (46.43%) of the girls recorded a score higher than 20, indicating a high level of stress.

As for the relationship between the frequency of participation in physical education classes and perceived stress levels, we have found a below the average level (m = 12.7) among young people who participate in organized sporting activities 2-3 times per week (42 %) and a higher than average score (m = 21) among those who attend classes only once a week (58%).

The IAF average is 62.05 for the subjects investigated, but it appears that for those who participate more frequently in Physical Education classes, the average is 74, which means that the young people who have achieved this score can be characterized as "active and healthy", being in a "very good" physical condition.

The following answers have been provided to the question "What are the reasons why you chose to attend physical education classes?" (see fig. 1):

As seen in the chart above, the main reason why students in our study opted for physical education classes is mental recreation, competitive spirit following relatively close behind. Improving health is another important
objective pursued by the respondents; this motivational picture indicates that students participating in physical education classes do realize the importance of sports in conducting a healthy lifestyle.

7. Conclusions

The conclusions drawn from the processing and interpretation of the data obtained validate our research hypothesis.

However, considering the age of the subjects included in our study, we think that the percentage of subjects whose score of perceived stress was above average is much too high, therefore we think it would be useful to extend our study to students who are not enrolled in physical education.

Based on our data, we can conclude that, in order to be effective, physical exercise should be practiced 2-3 times per week, in an organized way, possibly using a nice musical background (for aerobics and dancesport) in order to induce pleasure and relaxation. Sports games (such as table tennis, basketball) where players are confronted with direct opponents and where they are required to use their thinking, creative imagination and efficiency for solving various game situations, are another practical solution for combating stress and a sedentary lifestyle.

We think that attendance of physical education classes at the University of Bucharest should become mandatory, and a proposal along these lines should be made to the management of the university, as this would be an inexpensive and effective measure in fighting stress and a sedentary lifestyle, which would not only benefit the students themselves but also the university at large.

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