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Research regarding sport activities influence in fighting stress at sportive and non-sportive

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Abstract. Nowadays daily activities and the everyday rush for success and material fulfilment leads to a lot of stress accumulation and tiredness. Our research started from the idea that sport activities are a good way of distressing and escape from daily problems, and also we wanted to verify if people who practice performance sport are more resistant to stress then people that practice once or twice a week sports activities.

The research had as sample two groups: the experiment group formed by 50 professional sportsman (26 females, 24 males, averaging age ± 18.68 years old) that are professional sportsman; and the second group, the control group, was formed by 50 students (23 females and 27 males, averaging age ± 19.12 years old) from different faculties from "Lucian Blaga" University Sibiu that practice sports just once a week on the optional PE classes.

The main research method was the Perceived Stress Scale (PSS) being one of the most used psychological method for measuring the stress levels.

The conclusions of our research shows that the experiment group where we had performance sportive has better results at the stress test then the control group where we had students that practice fewer sports activities. The study reveals that sportive cope better with stressful situations and also with recovery from stressful activities then people who practice less motor activities, sport activities puts them in different situation that force them to be mentally though.

1. Introduction

Nowadays the spectre of stress level and also the sedentary lifestyle of humans are considered to be the "diseases of the century", the accelerated spreading, unfortunately, is produced in a category of people who should be defined by dynamism, a zest for life, exuberance [1].

Therefore regardless of gender, race, age, or social class, stress level is a paradox that affects everyone alike, without omission. On the other hand, even that it is present for each human being, it must be considered that the level of intensity, produces, responses or reaction to various situations that can differ from person to person [2].

Practicing sports activities rises the level of self-confidence, motivation, self-esteem, and helps in reducing stress level among its participants. A person that has all the social qualities is proving itself worthy for his family and also for the entire society [3].

Properly programmed exercise can protect people under stress helping them lose excess of energy, diminish the frustration level, can reduce also the level of anxiety, loneliness, sadness, depression, distrust, and also the lack of interest in everything around [4].

Sports psychology specialists should analyze the entire coping strategy that sportsman should approach when they encounter consistent pressure from the outside [5][6]. As can be noted the development of nowadays society generates exceptional quantitative and qualitative development in all areas, including the area of sports performance [7]. Therefore, sport activity has a positive influence on the dexterity [8].

Some scientific studies have proven that the in the absence of significant decrease of physical effort, even in extraordinary conditions of environment and alimentation, lead to a great loss of chemical resources such as nitrogen, phosphorus, sulphur, calcium, sodium and potassium. Sport activities contributes to the prevention of deterioration and biological degeneration and increase the body's ability to counteract some tensions [9].

Negative elements like tension, stress, and worry are all the factors that are directly affecting the physical performance of a human being. To have a good performance level, the individual needs to take part in all those activities which provide psychological satisfaction and also reducing the psychological negative elements like tension, stress, and worry [10]. Sports activities participation boost up the level of confidence among the players. A player with high level of confidence always show good performance in the competition [11].

Regarding the competitive stress scientist affirm that it can create distressful emotions, therefore appear the sensation of unable to think properly, felt not confidence and not able to pay attentions to the games [12].

In some sports activities and scientific performance literature, stress elements have been defined as environmental demands that are encountered by an individual in different situations and have been classified into three main directions: competitive, organizational and personal stressors [13].

Physical activities and physical exercises have significant effect on mental health development of its participants. Some specialist affirm that one of the main reasons or cause of high stress level among the people is spending free time usefully. Therefore if a person takes part in sports activities in his free time then he can acknowledge the role of sports participation in the relaxing and refreshment of his mode. Participation in sports activities can develop the level of self-confidence, motivation and self-esteem and can help in reducing stress level among its participants [14].

Also the influence of exercise and sports activity on the body can be felt not only for the organs and functions that are currently required for effort but also, cumulatively, through repetition, can improve the body morphogenetic and physiological gains, with real tonic effects on vigour and health level. Contrary to this, body immobilization can develop into atrophy, with the body being trapped in a "vicious circle" of inactivity [15].

Control of the emotions and its influence in sports is crucial in obtaining performance: although sports activities are mostly practiced for fun and enjoyment [16], professional athletes experience and develop anxiety and stress levels when they try to obtain a high performance [17].

Stress level in competitive sport at high or elite level can develop very fast that's why athletes are required to have both mental and physical high capacity in order to handle the pressure during competition, thus each of the athletes who compete needs to train themselves in both areas to ensure better performances [18].

Regarding the process of human beings development, some authors affirm that they tend to improve their physical capacity, intellectual skills and also moral characteristics as to become a useful person in the society. So humans are always concerned about their status of health, their capability to work, and for this they understand the requirement for doing more exercise and practice sports regularly [19].

As for the psychological factors such as stress level, tension and worry can also affect the physical performance of an athlete. Therefore an athlete with psychological satisfaction always

demonstrates good performance in physical activities as compare to athlete who has psychological dissatisfaction [20].

Aim of the research

The aim of our investigation was to find out the main stress factors that occur during our daily activities or sport competition and how sports activities and psychological training can help in fighting anxiety, fear to perform or the pressure of results.

Our study aims to compare the stress factors that appear in sportsman activities (training, competitions, and training sports camps) and how psychological training improves the performance of athletes compared with unsportsmanlike and the positive influence of sports activities on their everyday life.

Methods of the research

The place and period of the research

The research took place between September 2017 and January 2018 in Bucharest and Sibiu, and had as participants sportive from different sports clubs from Bucharest and students from different faculties from “Lucian Blaga” University from Sibiu.

Sample of the research

The research sample was formed by two groups, first group, the experiment group, was formed by 50 professional sportsman (26 females, 24 males, averaging age ± 18.68 years old) that activate in the junior league from different volleyball clubs from Bucharest; and the second group, the control group, was formed by 50 students (23 females and 27 males, averaging age ± 19.12 years old) from different faculties from “Lucian Blaga” University from Sibiu that also play volleyball in optional courses in our university.

Methods of research

The main research method used in our experiment was the Perceived Stress Scale (PSS) with which we measured the psychological stress and how sports activities helped in relaxing both physical and psychological. Perceived Stress Scale is one of the most used psychological method for measuring the stress levels or how situations in people's life are appraised as stressful. The used scale includes a number of direct questions regarding the current levels of experienced stress. Also the items are of a general nature and hence are relatively free of content specific to any sub-population group. The items used in the Perceived Stress Scale ask about feelings and thoughts during the period of time. At every question, respondents are asked to answer how often they felt a certain way of anxiety or stress.

Some authors affirm that PSS is a psychometrically sound global measure of perceived stress that could provide valuable additional information about the relationship between stress and pathology, the Perceived Stress Scale (PSS) was developed in response to these issues and measures the degree to which situations in one's life are appraised as stressful [21].

PERCEIVED STRESS SCALE [21]

The items in this questionnaire enquire about what you felt and thought for period or in the last month. You are asked to select by circling the closest option to the right answer.

Name and surname _____

Date of filling the questionnaire _____

Age of the respondent _____

Gender of the respondent: Male Female

0 = Never 1 = Rarely 2 = Occasionally 3 = Frequently 4 = Often

1. In the last period of time, how frequently do you experienced disappointment regarding something that happened unforeseen? 0 1 2 3 4
2. In the last period of time, how frequently have you felt that you were unable to control the important things in your life? 0 1 2 3 4
3. In the last period of time, how frequently have you felt nervous and “stressed”? 0 1 2 3 4
4. In the last period of time, how frequently have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. In the last period of time, how frequently have you felt that things were going your way? 0 1 2 3 4
6. In the last period of time, how frequently have you found that you could not cope with all the things that you had to do? 0 1 2 3 4
7. In the last period of time, how frequently have you been able to control irritations in your life? 0 1 2 3 4
8. In the last period of time, how frequently have you felt that you were on top of things? 0 1 2 3 4
9. In the last period of time, how frequently have you been angered because of things that were outside of your control? 0 1 2 3 4
10. In the last period of time, how frequently have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

Analyzing the results of the Perceived Stress Scale Questionnaire

First, reverse your scores for questions 4, 5, 7, and 8. On these 4 questions, change the scores like this: 0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0. Then add up the scores for each item to get a total.

The results of the individuals on the Perceived Stress Scale Questionnaire can differ from 0 to 40, and having a high score can show that individuals have a higher perceived stress.

The results that are in the interval from 0-13 have a low perceived stress level.

Results that are in the interval of 14-26 have a moderate perceived stress level.

Results that are in the interval of 27-40 have a high perceived stress level.

Results of the research

The first step was to apply the Perceived Stress Questionnaire to our two groups of sportive and then to analyse the results of the test. The following results has emerged:

Table 1. The results of the Perceived Stress Questionnaire at the experiment group

Sample of students / The level of stress	Low stress level (score between 0 - 13)	Moderate stress level (score between 14 - 26)	High perceived stress level (between 27 - 40)
Female respondents (N=26)	19.23% (N=5)	53.85% (N=14)	26.92% (N=7)
Male respondents (N=24)	29.16% (N=7)	54.16% (N=13)	16.67% (N=4)
Total (N=50)	24% (N=12)	54% (N=27)	22% (N=11)

Analyzing the results from Table 1 we can affirm that, taking it by gender, at the experiment group from 26 female respondents we have 5 of them, representing 19.23% from the total, with a low stress level (scores between 0 and 13); 14 females, representing 53.85% from the total, with a moderate stress level (scores between 14 and 26) and 7 females, representing 26.92% from the total, that have a high perceived stress level (between 27 and 40) compared with the male gender where we have the following results: 7 male respondents, representing 29.16% from the total, have a low stress level (scores between 0 and 13); 13 male respondents, representing 54,16% from the total, have a moderate stress level and 4 male respondents, representing 16.67% from the total, have a high perceived stress level (between 27 and 40).

As regarding the total amount of sportsman from the experiment group we had 12 respondents, representing 24% from the total amount of respondents, have a low stress level (score between 0 and 13); 27 respondents, representing 54% from the total, with a moderate stress level (score between 14 and 26) and 11 respondents, representing 22% from the total, with a high perceived stress level (score between 27 and 40).

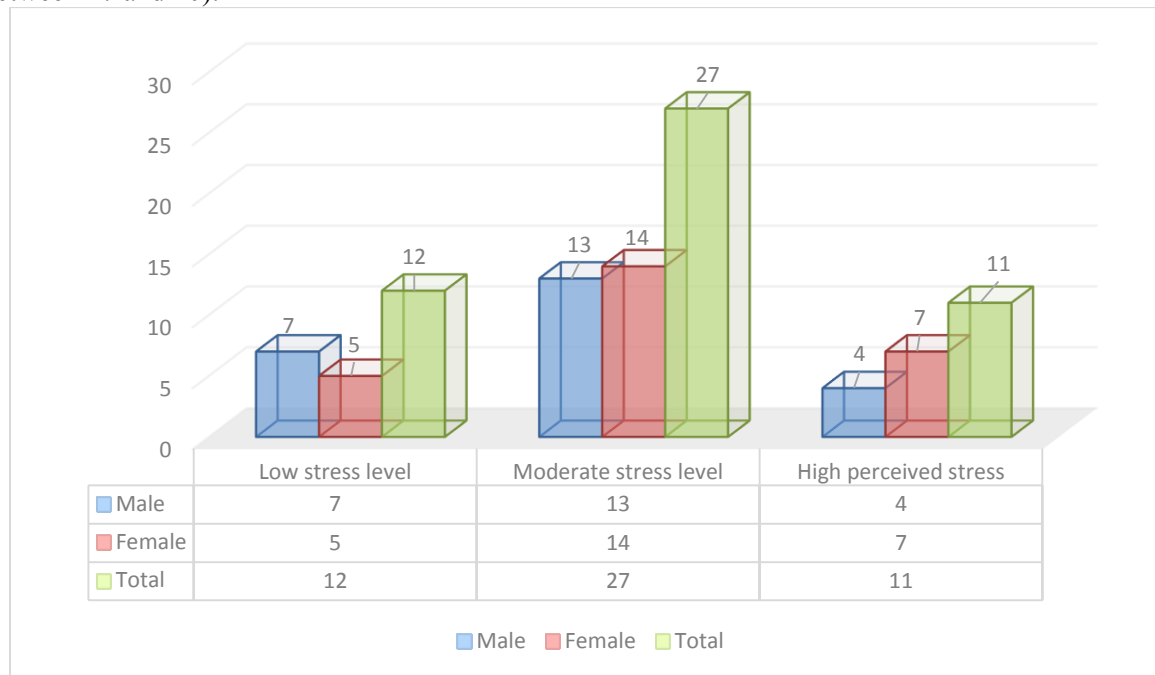


Figure 1. The perceived stress level on gender at the experiment group

Analysing the representation of perceived stress level on gender at the experiment group in Figure 1, we can observe that the majority of sportive questioned have a moderate stress level (27 respondents representing 54% from the total), also we found more low stress level responders then high perceived stress responders in the experiment group – 12 low stress responders (representing 24% from the total) compared with 11 high stress responders (representing 22% from the total).

Table 2. The results of the Perceived Stress Questionnaire at the control group

Sample of students / The level of stress	Low stress level (score between 0 - 13)	Moderate stress level (score between 14 - 26)	High perceived stress level (between 27 - 40)
Female respondents (N=23)	13.04% (N=3)	43.48% (N=10)	43.48% (N=10)
Male respondents (N=27)	18.52% (N=5)	44.44% (N=12)	37.03% (N=10)
Total (N=50)	16% (N=8)	44% (N=22)	40% (N=20)

Regarding the control group, composed by students that practice sports activities 1-2 times a week, analysing Table 2 we found at the female gender the following results: 3 respondents, representing 13.04% from the total amount of females, have a low stress level; 10 students, representing 43.48% from the total, have a moderate stress level and also 10 students, representing 43.48% from the total, having a high perceived stress. At the male gender we had the following results: 5 male respondents, representing 18.52% from the total, have a low stress level; 12 respondents, representing 44.44% from the total, have a moderate stress level and 10 respondents, representing 37.03% from the total, have a high perceived stress level.

Regarding the total amount of students that responded to the questionnaire we can affirm that: 8 students, representing 16% from the total, have a low stress level; 22 students, representing 44% from the total, have a moderate stress level and 20 students, representing 40% from the total, have a high perceived stress level.

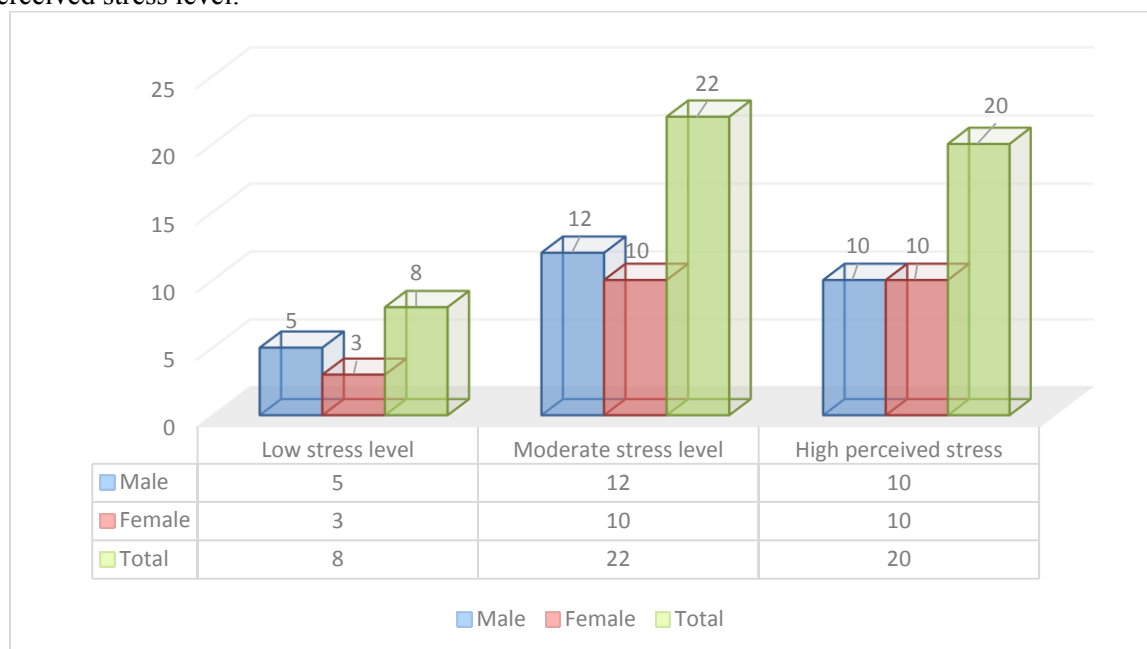


Figure 2. The perceived stress level on gender at the control group

Regarding the representation from the Figure 2 where there can be observed the perceived stress level on gender at the control group, we affirm that the majority of students questioned (22 respondents representing 44% from the total) have a moderate stress level, 20 students (representing 40% from the total) have a high perceived stress and 8 students (representing 16% from the total).

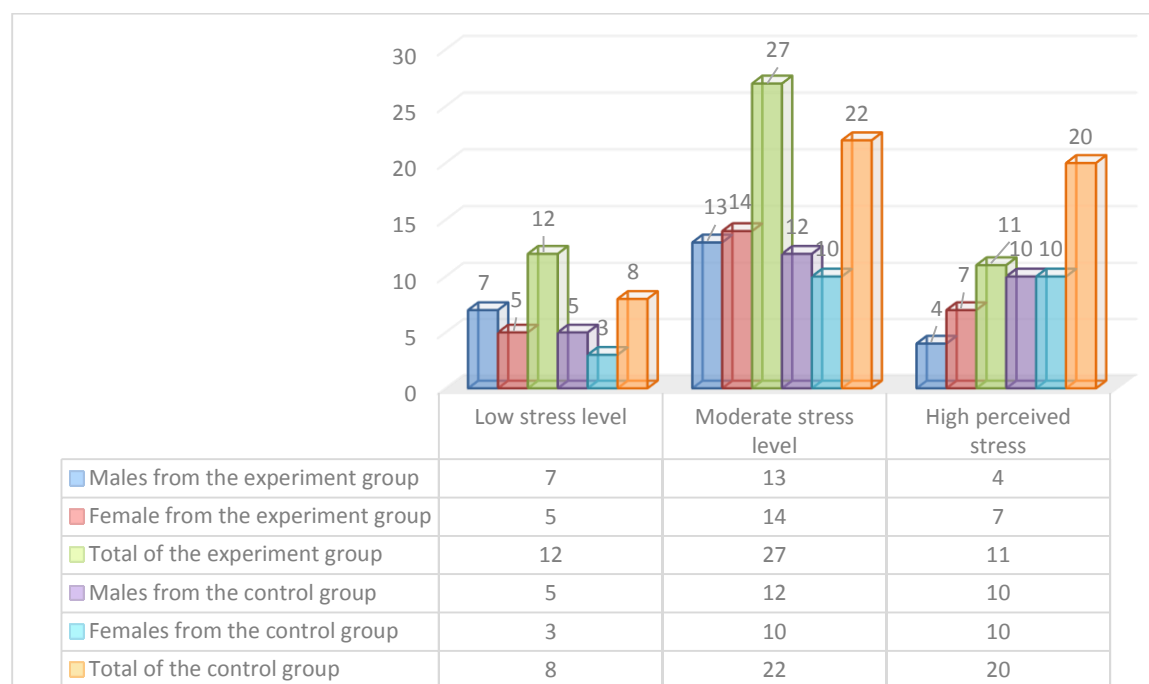


Figure 3. Comparison between experiment group and control group regarding perceived stress level

At Figure 3 regarding the comparison between the experiment group and the control group at the perceived stress level we can observe that at the experiment group, where we had the sportive group, we have 12 persons that have a low stress level compared with 10 persons at the control group, where we had the students. Also at the moderate stress level in the experiment group we have 27 persons compared with the control group where we find 22 persons. At the high perceived stress level at the control group we had 20 persons compared with the experiment where we had just 11 persons.

Conclusions

Some scientist affirm that the ability to cope with stressful situation do not happen or exist naturally, but require learning, awareness and practice [22]. According to scientist Kirk, Cooke, Flintoff, and McKenna [23], athletes who desire to successfully maintain their high level of sport performance, must educate themselves to associate with variety of psychological coping and mental toughness skills.

Also other findings by Khan, [24] indicates that satisfaction level regarding human mind is a basic human need. Therefore lack of psychological satisfaction affects the development of the overall functions of the human body parts. Taking part in physical activities can promote the functional capacity of human body systems.

So, coaches and sport psychology should try to implement and develop the most effective coping strategy depending on the individual and situation in order to optimizing their sport performances [25].

Other study by Belem, Caruzzo, Nascimento Junior and Vieira [26] also found that coping strategies did help elite beach volleyball athletes and also had significant impact on resilience among these athletes. They also found that coping strategies overcomes difficulties, increase motivation and concentrations among athletes.

The conclusions of our research shows that the experiment group where we had performance sportive had better results at the stress test then the control group where we had students that practice fewer sports activities. The study reveals that sportive cope better with stressful situations and also with recovery from stressful activities then ordinary people, sport activities puts them in different situations that force them to be mentally though.

Comparing the two groups we can observe that we had more persons at the experiment group with low stress level (N=12) compared to the control group (N=10), more persons with moderate stress level also in the experiment group (N=27) compared with the control group (N=22) and also less persons with high perceived stress level in the experiment group (N=11) compared with the control group (N=20).

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