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Stress & coping in athletes and non-athletes students - comparative study

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Abstract

This study aims to determine the correlation between stressful events and physical symptoms on a sample of 136 students. The study also focused on determining the coping strategies adopted by our subjects, as ways of handling stressful situations. In order to verify our hypothesis, COPE Questionnaire and Burnout Inventory were applied to students from the Ovidius University of Constanta, male and female, aged between 19 and 28 years, from different profile faculties. Main variables were assessed by age, gender and educational profile. Scores obtained for the psychological dimensions, revealed significant differences regarding stress levels and also coping strategies.

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1. Introduction

Stress is defined as “the process by which environmental events, threaten or challenge an organism’s well-being and by which that organism responds to this threat” (Gatchel, 1996). Stress is commonly associated with two simultaneous events: an external stimulus, called a stressor, and the physical and emotional responses to that stimulus (anxiety, fear, muscle tension, heart rate, and so on). Stress can come from the environment, or from a person’s body or mind (Reece, Brandt & Howie, 2010).

A study conducted by the National Institute for Occupational Safety and Health found that half the working people in the United States view occupational stress as a major problem in their lives. The factors generally included in the concept of occupational stressors: work-life balance; long hours/irregular schedules; multitasking; internet addiction; work and family transitions; rumination.

In a recent study conducted with first year students from Ovidius University (Giurgiu, Girip et al, 2010 - *The integration and adaptability among the first year students*), the respondents (110 students aged between 18 and 23 years old) indicated the following set of feelings and perceptions experimented in the beginning of the student life: “confusion and fear”, “a greater need to communicate and receive moral support”, “difficult to adapt to the academic life and its requirements”, “pressure to highly perform at school”, “able to discover new skills and abilities”. Some of the respondents talked about their struggle with financial issues and constraints claiming that they do not have “sufficient money to cover studies related expenses.

2. Theoretical Issues

2.1. Responding to Stress

Stress responses consist of three elements: the event or thought (stressor) that triggers stress, the individual perception of it, and the response to it. The physiological response manifest in decreased levels of professional/academic competitive performance, interpersonal problems etc. (Reece, Brandt & Howie, 2010) and requires the development of coping strategies to stress and/or burn-out. According to Schaufeli & Green (2008), burnout is “a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding”. Gould defined burnout, as “the manifestation or consequence of the situational, cognitive, physiologic, and behavioral components of excessive stress”. In the context of sport, burnout has been defined as “a psychological, emotional, and physical withdrawal from a formerly pursued and enjoyable sport as a result of excessive stress which acts on the athlete over time. To cope mean „to struggle or deal, especially on fairly even terms or with some degree of success; to face and deal with responsibilities, problems, or difficulties, especially successfully or in a calm or adequate manner” (<http://dictionary.reference.com>)

2.2. Coping Strategies

A coping strategy is a deliberate, rationally planned set of activities designed and implemented to deal successfully with unwelcome situations, persons or circumstances. In the sport domain “there are numerous situations that athletes may find challenging, threatening, or harmful” including “avoiding or recovering from injury, playing an important game, media attention, poor refereeing, bad weather conditions, provocative opponents” (Ntoumanis et al. 1999). Enhanced planning, more information, greater effort, or new skill acquisition may be in the repertoire of strategies that will enable someone to contend with a situation or an opponent more effectively and thus reduce anxiety (Ntoumanis, 1999). According to Maltby & Day (2001), one of the benefits of physical exercise is to improve the psychological well-being of a person; in particular, physical exercise is thought to reduce depression and stress.

3. Research methodology

3.1. Hypotheses

This empirical research aims to identify the stress level for our sample, and the coping strategies used more often by the respondents. Our first hypothesis was that freshman are confronted to a higher level of stress than more advanced students, and this fact impact on the level of their adaptability and integration in the academic field.

We also assumed that there is a significant difference between male and female subjects, regarding the selection of strategies, in order to cope better with all requirements of a student’ life style.

The third hypothesis was that professional (career) athletes have developed more effective coping strategies than nonprofessional athletes, during their training process and competitive participation.

3.2. Research instruments

The research methodology consisted of two psychological instruments that targeted our subjects. The Maslach Burnout Inventory (1981) is a 25-item survey that assesses the level of professional burnout, mainly in human service, education, business, and other professions, in the following three areas: 1) Emotional exhaustion, by measuring feelings of being emotionally overextended and exhausted by one's work; 2) Depersonalization, by measuring the lack of feeling and impersonal response toward recipients of one's service, care treatment, or instruction; 3) Personal accomplishment, by measuring feelings of competence and successful achievement in one's work. The Cope Questionnaire (Carver, Scheier & Weintraub, 1989) is a 53-item survey, designed to measure conceptually distinct aspects of: a) problem-focused coping (active coping, planning, suppression activities, restraint coping, seeking of instrumental social support); b) aspects of what might be viewed as emotion-focused coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion); c) coping responses that arguably are less useful (focus on and venting of emotions, behavioral disengagement, mental disengagement).

3.3. Subjects

The study sample included 136 students from the Ovidius University of Constanta (including equally women and men), enrolled in the first, second and third year of study, aged between 19 and 28 years and also, professional and nonprofessional athletes. We considered professional or “career athletes”, the subjects with an extensive experience in sport, a great competitive activity (high performances reported in the field, e.g. participants to international level competitions), and/or who own a professional agreement in sport.

4. Scoring and interpretation.

The strategy of data analysis was designed based on the principles of comparative research among the stratified group, in order to detect differences and / or similarities of the respondents, regarding the stress levels (reflected in decreased personal achievements and emotional exhaustion) and also, the differences concerning the chosen more or less effective strategies, in order to cope with stress.

Main variables were assessed by age, gender, or athletic categorie. In order to clarify the relationship between the main variables, Pearson's correlation coefficients were calculated.

The statistical analysis of the Maslach Burnout Inventory data, indicates **a medium level of stress** for all participants, highlighting the dimensions with higher scores, as following:

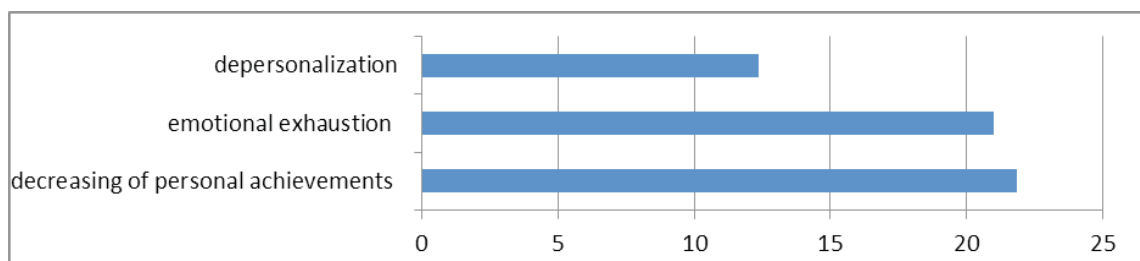


Fig. 1 Stress level for main variables of Maslach Burnout Inventory (N=136)

- Decreasing of personal achievements – 21.84 pts. (out of 30 pts.)
- Emotional exhaustion – 21.00 pts. (out of 27 pts.)
- Depersonalization - 12.37 pts. (out of 18 pts.)

The results of Cope Questionnaire, are descriptive for the coping strategies, which the subjects are most likely to use (for a range from 4-16 points):

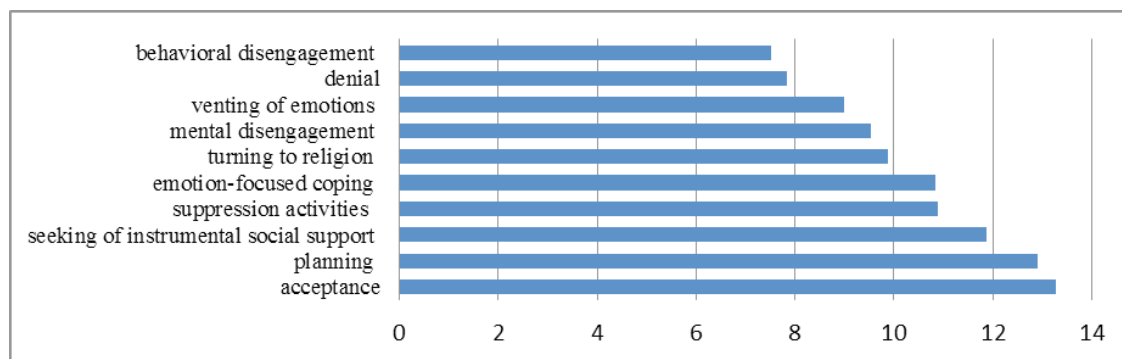


Fig. 2 Hierarchy in ascending order of most commonly used coping strategies (N=136)

5. Findings and results

5.1. Hypothesis testing

The analysis of the results has verified the general hypothesis, that there are significant differences between the studied groups, on the criteria academic experience, gender, and athletic cathégorie.

In Table 1, the results shows significant differences of the respondents' perceptions based upon their *academic experience*. The freshman seem to benefit less from "active coping" strategies and "planning", than advanced students, who also reported that often use "seeking of instrumental support" and "focus" on stressful problems.

Table 1 Differences in coping strategies on the *academic experience* criteria, for a range of 4-16 points

	Freshman	Advanced students	p-value (Student's t-test)
Active coping	11,27	12,15	p<0,01
Planing activities	12,09	13,20	p<0,01
Focus on problems	10,45	11,22	p<0,05
Seeking of instrumental support	11,21	12,65	p<0,05

In Table 2 (showing the differences on gender criteria), we can see that generally, women seem to be more determined to "plan the activities" and "seeking of emotional support" in comparison with men. The "denial" score is lower to women than men's. Further, female students are more willing to talk and share their personal struggles with their peers and are more "religion oriented" than men. Both female and male students commented that they enjoy the "instrumental support".

Table 2 Differences in coping strategies on gender criteria, for a range of 4-16 points

	Female	Male	p-value (Student's t-test)
Planing activities	11,33	10,61	p<0,01
Religion oriented	10,28	9,19	p<0,05
Denial	7,51	8,37	p<0,01
Seeking of emotional support	11,75	10,62	p<0,01

The findings illustrated in Table 3, highlight the variation of the respondents' coping strategies, based upon their *athletic experience*. For example, the professional athletes seem to benefit a lot from "active coping" strategy, "planning activities" and "focusing" on stressful problems, than less experienced athletes. This aspect can be explain by the psychological techniques developed and used in professional sport (e.g. "goal settings", "attentional style", "optimal focusing" etc). We can see a maximum score of 16 points, reported by all professional athletes, on "planning".

Table 3 Differences in coping strategies on the *athletic experience* criteria, for a range from 4-16 points

	4 to 8 years in sport	More than 8 years in sport	p-value (Student's t-test)
Planing activities	13,22	16,00	p<0,01

Active Coping	11,22	15,00	p<0,05
Focus on stressful problems	10,88	15,00	p<0,01

A closer look to the results presented in the Table 4, suggests that even when the general level of stress is medium (as we can see in Figure 1), career athletes are experiencing a higher level of “depersonalisation” than less experiences athletes, while the dimension “decrease of personal achievements” and “emotional exhaustion” are at a similar level. In our opinion, the competitive stress adding to the stress derived from academic course requirements, may induce even more maladaptive reactions to professional athletes, by affecting their self-identity and self-esteem.

Table 4 Differences in coping strategies on the *athletic experience* criteria

	Nonprofessional athletes	Professional athletes	Maximum range Pts.	p-value (Student's t-test)
Depersonalization	11,42	12	18 pts.	p<0,05
Decreasing of personal achievements	21,41	21	30 pts.	p<0,05
Emotional exhaustion	20,92	20,76	27 pts.	p<0,05

5.2. Correlation

Pearson's bivariate correlation (significant at the 0.01 level), showed the relationship between the following variables:

- “Decreasing of personal achievement” is highly correlated to “emotional breakdown” (.287**), “behavioral passivity” (.302**) and negatively correlated to “active coping” (-.416**) and “planning” (-.259**);
- “Depersonalization” is positively correlated to “decreasing of personal achievement” (.379**), “emotional breakdown” (.321**) and risk of “substance use” (.323**); This dimension is also negatively correlated to “planning”(-.280**) and “acceptance”(-.228**);
- “Active coping” strategy positively correlates to “planning” (.599**), “focusing”(.(393**), “seeking of instrumental support” (.264**) and “emotional support”(.(239**);
- “Denial” as a coping strategy is highly related to the risk of “emotional breakdown” (.334**), “mental passivity”(.(443**) and “behavioural passivity” (.395**).

5. Conclusion

In general, the findings of this study are similar with the results of other researches conducted in the area of students adaptability to the academic environment and management of stress related issues. Furthermore, there could be a positive aspect of stress, in the way of being a powerful stimulus for growth and motivates a person to do the best work. It can also promote greater awareness and help someone focus on getting tasks completed quickly and efficiently (Tenenbaum & Eklund, 2007).

Our results confirmed the first hypothesis, that freshman from our sample, experience a higher level of stress than more advanced students and they lack effective coping strategies. In our opinion, the stress level is even higher if the freshman found themselves suddenly at a greater distance from their families and homes or they are struggling with financial difficulties. In these cases, they are forced to work in order to support their studies. For these subjects, some forms of occupational stress are present and are mainly related to multitasking, long hours/irregular schedules, work and family transitions, difficulty to adapt to the academic life and its requirements, and pressure to highly perform at school.

Our second hypothesis was confirmed by the significant differences between women and man, regarding the most commonly used strategies, which are the *emotion-focused strategies* for women and the *problem-focused strategies* for men, both use primarily by the respondents in order to reduce stress.

Concerning our third hypothesis, we can conclude that professional athletes benefit a lot from the development of psychological skills during their performance activity than nonprofessional athletes, but we can also say that the high “depersonalization” score, indicates a general lack of mastery for relaxation techniques.

Our study reveals however, an average level of stress for the entire sample, and one of it's limitations was that we could not highlight the relationship between the level of stress and the involvement in sport in an organized and systematic manner (e.g. everyday practice of fitness, jogging etc.), which could bring more relaxation and fun in the

respondents lives, being a method to fight against stress.

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