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The level of anxiety as a facilitating or inhibiting factor in sports performance

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Abstract. The research part of the paper is based on four hypotheses that aim to verify the following correlations: correlations between sports anxiety and anxiety as a feature, then between cognitive anxiety and self-esteem, correlations between anxiety in team sports and individual sports. Sport anxiety and sport performance were also investigated, as well as exploring sport anxiety to reduce it and increase athletes' sport performance. Regarding this, three online questionnaires were administered to a group of 90 athletes (48 from individual sports and 42 from team sports) of both female and male gender, for a period of 6 months. The team sports were basketball and football and the individual sports were gymnastics, martial arts and wrestling. The respective questionnaires represented the research instruments and were as follows: ASQ, Rosemberg and CSAI 2. The research aimed to find out through the results obtained whether anxiety in its forms, as a characteristic, or cognitive influences positively or negatively the performance outcomes of athletes. At the same time, it was found that self-esteem represents an important factor in helping to reduce cognitive anxiety, and even more importantly, it helps athletes to use anxiety effectively. It has been found that sports performance is affected by anxiety, especially in elite athletes, who feel a major pressure on their way to competitive success. Correlations between the ASQ and subscales of the CSAI-2 test found that anxious individuals already have a background for developing greater sport anxiety, interpreting certain situations negatively, compared to individuals who are more positive.

Keywords. anxiety, sports performance, correlated

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1. **About sports anxiety, competitive anxiety, anxiety as a characteristic and self-esteem**

Definition of sports anxiety

According to the Dictionary of Psychology (coord. Ursula Șchiopu), anxiety is defined as *"a vague, diffuse, affective state of concern, pressure, tension, worry state and unmotivated fear, without object"*, which induces psychological discomfort. *P. Pichot* defines anxiety as an emotional state consisting of three main elements: the perception of an eminent danger, an attitude of expectation and the experience of total helplessness in the face of this danger.

M. Epuran defines anxiety „as a fear without object, and in sport as an emotional state with well-defined causes that is expressed as an adaptive reaction to situations that may threaten the balance of the athlete's self". Anxiety is manifested as a state of fear, of concern that arises in the face of situations that could turn out to be dangerous even when they are only considered so by the individual. Unlike fear, when the individual knows and can represent.

„Anxiety represents a disorder of affectivity manifested by states of uneasiness, fear and unmotivated worry, in the absence of causes that can induce them. Anguish is defined as "fear without an object" as opposed to phobia, which is "fear with an object". Anxiety often manifests itself in the form of a state of fear caused by uncertainty in which the subject has the impression of an imminent misfortune, which hovers everywhere, surrounds him or her, pervades him or her, but cannot be defined or removed. Anxiety states are accompanied by body functional phenomena such as precordial embarrassment, palpitations, difficulty in breathing, sweating, etc. As a psychopathological symptom, it occurs in anxious melancholia, obsessive neurosis, phobia, the onset of psychosis or endocrine and cardiac disorders. *(P.Popescu-Neveanu, 1978).*

"The entire dynamics of the human personality system (formation, manifestation and realization) is circumscribed and conditioned in a direct way by the dialectic of the relationship between internal demands (the individual's own motivational states) and external demands (the existences and motivational states specific to the existential environment, primarily the social one)" *(Golu Mihai, 1993).*

Lader (1977) defines anxiety as "an unpleasant affective state having the subjective qualities of fear, associated with a feeling of danger, the threat being diffuse, disproportionate to the intensity of the emotion, or apparently the threat is lacking".

"We need to make a clear distinction between two notions that are today well defined as anxiety-state and anxiety-trait. The notion of emotional state as its name indicates corresponds to a transient state that can occur in any individual. In contrast, trait anxiety is an apparently innate, individual characteristic that manifests itself in two ways: the predisposition to feel states of fear in the presence of stimuli that for other individuals are much less anxiety-provoking or not anxiety-provoking at all, and the predisposition to develop conditional fears in the presence of stimuli that are not, by themselves, anxiety-provoking. A high level of anxiety as a trait has a pathological character" (Larousse, 2016).

Anxiety is generally defined as an emotional response to a stimulus or situation perceived as dangerous (Raglin and Hanin, 2000). However, such stimuli or situations are subjective, indicating that some individuals may view a particular stressor as threatening, while others may view the same stressor as beneficial in some way. Anxiety only occurs when one identifies a particular danger or threat, regardless of how the situation may appear to others. A wide variety

of cognitive processes, including verbal and mathematical skills, can be influenced both positively and negatively by anxiety (MacLeod, 1996). Researchers have suggested that the adverse effects of anxiety result from limited processing abilities after excessive excitation. As such, one reason why anxiety is more harmful when a task is difficult is because complex tasks require more information input, which is limited by anxiety (MacLeod, 1996).

Anxiety is multidimensional, it can be divided into trait anxiety and state anxiety. Trait anxiety is a personality characteristic that remains relatively stable over time, while state anxiety is activated in response to certain situations, such as an athletic competition, an important exam, an accident, etc. Trait anxiety is characterized by an inherent propensity to perceive certain stimuli as threatening and, in turn, responds with increased state of anxiety when a particular stimulus is present. Instead, state anxiety involves increased levels of physiological excitation, restraint, fear, and tension (Cox, 2007). Researchers have shown that high levels of trait anxiety can lead to increased state anxiety in situations related to performance (HorikawaYagi, 2012; Martens, Vealey, & Burton, 1990).

Anxiety is also multidimensional by the fact that it has cognitive and somatic components. Cognitive anxiety includes worries about outcomes, evaluations, potential failures and inadequacies, while somatic anxiety is characterised by muscle tension, increased heart rate, sweating and a sense of fear. Anxiety is often synonymous with related terms such as affect, emotion, mood and stress, because there is a considerable overlap between these variables and anxiety. Affect is a general term that refers to any type of emotion, feeling or mood; whereas emotion describes an instantaneous response to a particular environmental situation.

The expression "*self - esteem*" comes from the verb "to estimate" from the Latin estimare, "to evaluate," whose meaning is twofold: both "to determine the value" and "to have an opinion about"

In any field of activity, an individual's "self-image" and "social image" are closely linked. Self-image has a positive character in the case of "winners" and when it is negative, it is a determinant of failure. "*Self-esteem is a personality trait in relation to the value an individual attributes to himself or herself. Along the lines of balance theories, self-esteem is defined as a function of the ratio between satisfied needs and the totality of felt needs. On the line of social comparison theories, it is defined as the result of the comparison that the subject makes between himself and other individuals significant to him*." (Dictionary of Psychology, 2016).

"Self-esteem is the first concern of an individual and represents a fundamental human project. Each individual has a tendency to dominate his fellow human beings and to assume a superior role in relation to them..." (Adler).

Self-esteem has three components: self-confidence, self-concept and self-love. A good balance of each of these three components is essential for achieving harmonious self-esteem.

2. Models of sports performance:
Over the years there have been many models of sports performance, some with similar component, some innovative, but all aimed at helping coaches and athletes to achieve sports performance. The following are some of these models.

Cratty's model (1967) and later adopted by Carron (1980) presents four categories of factors influencing performance: social, structural, physiological and psychological. Starting

from the innate elements, which mainly concern anatomo-functional factors, but also motor and psychological factors, the authors also add the influences of exogenous, social factors (the athlete's entourage).

Singer's model (1972) Singer believes that the essential factors of sports performance are:

Heredity, morphological characteristics and capacities.

Childhood experiences.

Previous sporting experiences, skills acquired during the sporting career.

Training condition.

Interest, motivation.

Influence of culture, family and friends.

Coach's leadership, compatibility between coach and athletes.

Ability of the athlete.

Buchart's model (1971) Buchart considers that the achievement of performance is conditioned by three subsets: the subset of invariables (heredity, physical, psychological, physiological and social factors), the subset of variables (sport training factors) and the control determinations (control and organisation of the athlete's preparation for performance).

3. Research on the level of anxiety as a facilitating or inhibiting factor in sport performance

Description of the sample of subjects

The present research consisted of a psychological investigation which involved the application of the four specific tests on a group of 90 athletes (48 athletes practicing individual sports and 42 athletes practicing team sports) of female and male gender. The questionnaires were administered online due to the pandemic situation, for a period of 6 months. Team sports were basketball and football, and individual sports were gymnastics, martial arts and wrestling.

Aim and objectives of the paper:

The present research aims to find out the correlations between sport anxiety and the variables: self-esteem, sport performance, anxiety as a trait and the type of sport practiced (team or individual).

Identification of existing correlations between cognitive anxiety and self-esteem

Identification of existing correlations between anxiety in team and individual sports

Identification of existing correlations between sports anxiety and sports performance.

Identifying sport anxiety in order to reduce it and increase sport performance

Research hypotheses

It is presumed that there is negative correlation statistically significant between self-esteem and cognitive anxiety.

It is presumed that the higher the sport anxiety, the lower the sport performance.

It is presumed that sport anxiety would be higher in individual sports compared to team sports.

It is presumed that the higher the trait anxiety score, the more it would favour an increase in sports anxiety.

Research tools

ASQ - Anxiety Assessment Questionnaire. The ASQ questionnaire was used to assess anxiety as a trait. It captures cognitive, somatic and behavioural dimensions of anxiety. The scale items were constructed and validated by Lehrer and Woolfolk (1982). The overall score comprises 36 items and can range from: 0-288 points, 110 -135 average score, over 136 - high score.

Rosenberg Self-Esteem Scale (Self-Esteem Scale - SS)

The scale reflects the author's attempt to develop a unidimensional and global self-esteem assessment tool. The SS is a Guttman scale - the items represent statements about perceived self-worth on a continuum. The minimum score obtained is 10, signifying very low self-esteem, and the maximum score is 40, signifying very high self-esteem.The Crombach coefficient=0.89, reported by the author, indicates good internal consistency and test-retest reliability in the author's studies ranges from 0.85 (at one week interval) to 0. 88 (at two-week intervals). When scoring the results, the reference are the values between:10-16 points low self-esteem, 17-33 points - medium self-esteem, 34-40 points - high self-esteem.

CSAI-2 Competitive Anxiety Inventory (Competitive State Anxiety Inventory-2)(Martes, Vealy and Burton, 1990)

This questionnaire measures competitive anxiety as a state of moment. The scale divides anxiety into three components: cognitive anxiety, somatic anxiety and a component related to self-confidence. Self-confidence tends to be the opposite of cognitive anxiety and is another important factor in stress management. To score the CSAI-2, all scores for each item are taken at nominal value, except for question 14, where the score is reversed. The scores for each of these will range from 9 to 36, with 9 indicating low anxiety (confidence) and 36 indicating high anxiety confidence.

All results from the questionnaires were also entered and processed using SPSS software.

Results obtained and their interpretation:

Table 1. Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ASQ	.126	90	.001	.966	90	.018
Rosenberg	.116	90	.004	.945	90	.001
Anxiety.cognitive	.090	90	.071	.975	90	.074
Anxiety.somatic	.147	90	.000	.946	90	.001
Self-confidence	.097	90	.035	.952	90	.002

a. Lilliefors Significance Correction

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In Table 1, the normality of the scales was checked, looking to see whether the distribution is normal or abnormal. On four of the scales, namely ASQ, Rosenberg, Self-confidence and Somatic Anxiety p< 0.05 from which it follows that they have an abnormal distribution. Only Cognitive Anxiety has a normal distribution because p=0.07. Following this finding it was possible to determine which correlation coefficient should be used.

Tabel 2. Correlation between Cognitive Anxiety and Rosenberg

|			Rosenberg	Anxiety.cognitive
Spearman's rho	Rosenberg	Correlation Coefficient	1.000	-.097
		Sig. (2-tailed)	.	.363
		N	90	90
	Anxiety.cognitive	Correlation Coefficient	-.097	1.000
		Sig. (2-tailed)	.363	.
		N	90	90

Table 2. shows that there is a negative correlation between self-esteem (measured with Rosenberg and CSAI-2 scale, cognitive anxiety.

Table 3. Correlation between Cognitive Anxiety and Self-Confidence

		Anxiety.cognitive	Self-Confidence
Anxiety.cognitive	Pearson Correlation	1	-.821[**]
	Sig. (2-tailed)		.000
	N	90	90
Self-Confidence	Pearson Correlation	-.821[**]	1
	Sig. (2-tailed)	.000	
	N	90	90

[**]. Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows that there is a negative correlation between Self-confidence (cognitive anxiety scale.
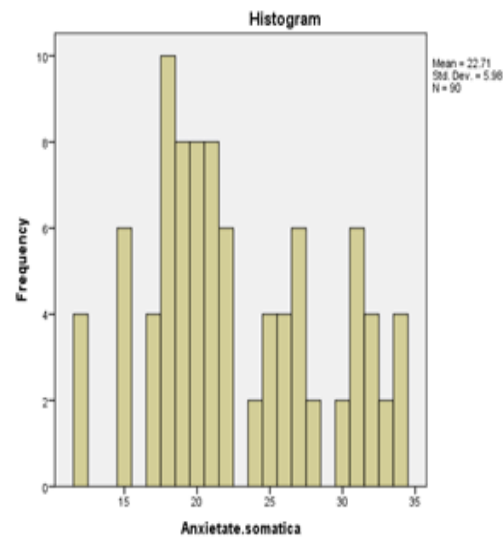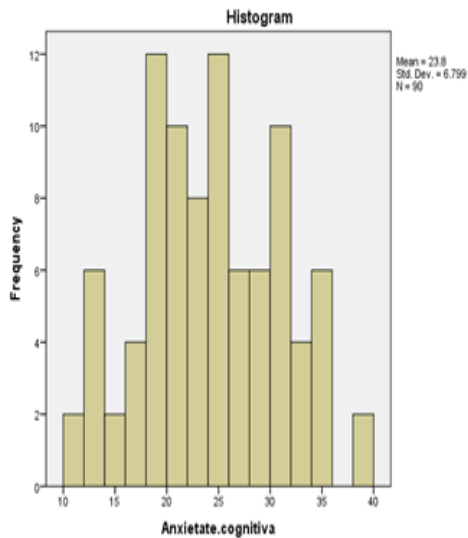
Cognitive anxiety is a scale of the CSAI-2 questionnaire. It measures the level of anxiety arising from the person's often exaggerated cognitions and has been proven to be the first to occur in competition, followed by somatic anxiety in the approach of competition.

Somatic anxiety is also a scale of the CSAI-2 questionnaire. Somatic anxiety is the last to appear, often very close to the time of the competition, and is characterised by unpleasant physical symptoms.

Also, following the comparison between sports performance and the two anxieties, it was found that locally an average of 20.83 was obtained on cognitive anxiety and 20.11 on somatic anxiety. Nationally, an average of 24.54 was obtained for cognitive anxiety and 22.54 for somatic anxiety. These results show that the higher the level of performance, the higher the anxiety.

Cognitive anxiety scored a minimum of 11, a maximum of 35 and an medium score of 23 in individual sports.

In team sports, sports anxiety had a minimum score of 12, a maximum score of 38 and an average score of 25.

Somatic anxiety scored a minimum of 12, a maximum of 32 and an average of 21 in individual sports. In team sports, somatic anxiety scored a minimum of 12, a maximum of 22 and an average of 22. This shows that anxiety in team sports is higher than in individual sports.

Table 4. Sports branch and sports anxiety

	sport	N	Mea	Std. Deviation	Std. Error Mean
Anxiety.cognitive	individual	48	23.50	7.199	1.039
	team	42	24.14	6.381	.985
Anxiety.somatic	individual	48	23.21	6.147	.887
	team	42	22.14	5.804	.896

Cognitive anxiety for individual sport resulted in a mean of 23.50 with a standard deviation of 7.19, and on team an average of 24.14 with a standard deviation of 6.38. On somatic anxiety, the average for individual sport was 23.21 with a standard deviation of 6.14, and for team sport an average of 22.14 with a standard deviation of 5.80.

There is also a positive correlation between ASQ (trait anxiety), cognitive anxiety and somatic anxiety. From this it appears that as the ASQ score increases, so does trait anxiety (cognitive and somatic anxiety).

Conclusions

The research results lead to the following conclusions:

Self-esteem is an important factor that helps to decrease the state of cognitive anxiety, and moreover that helps athletes to use anxiety in an effective way.

Sports performance is affected by anxiety, especially in elite athletes, who feel major pressure on the road to competitive success.

Although we initially assumed that athletes who play individual sports would score higher in sports anxiety, statistical interpretation revealed that team athletes have higher competitive anxiety. It is true that the differences were small, but significant to the research.

Anxious people already have a background for developing higher sports anxiety, interpreting certain situations negatively, compared to people who are more positive. Anxious people generally make themselves worry, even when it is not the case, by being in constant tension, expecting a negative outcome of a situation rather than a positive or neutral one.

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