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**ANALYSIS OF THE COMPETITIVE ANXIETY LEVEL IN  
BASKETBALL AND AEROBIC GYMNASTICS**

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***Abstract***

This paper analyzes and compares the level of competition anxiety at athletes among aerobic gymnastics and basketball as anxiety has an important role in decisions of the coaches in sport training. If we know the competitive anxiety level before competitions can we then lead the training of athletes? How does anxiety influence the psychological part of the training sessions? This study aimed to identify the level of anxiety of athletes in aerobic gymnastics and men's basketball, athletes in different training periods, to establish the role of anxiety in psychological training depending on the sport's specificity leading to the possibilities for optimizing sporting performances. The study was carried out by applying the test method -Sport Competition Anxiety Test. This test was performed on two groups of athletes aged between 15 and 21; one consisting of basketball players and the other of gymnasts. In this study it was observed that boys had a lower level of competitive anxiety than girls. While comparing the two sports involved in the test, it was found that athletes in men's basketball are less anxious than those of aerobic gymnastics, as shown by calculated averages. The analysis of competitive anxiety at the level of performance has provided differentiated information in relation to the specific and characteristics of the sports involved in testing (team sports, individual sports, the number and the manner of the competition) which would be useful for coaches interested in organizing sports training, using competitive anxiety management to obtain better results.

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**Keywords:** Aerobic gymnastics, basketball, anxiety, competition, training



## 1. Introduction

Psychological preparation is one of the basic components of sports training in order to participate successfully in competitions, regardless of the sport. The competition has a very high emotional load, competitive anxiety representing one of the psychic factors of contest and an analysis of this in the two sports chosen by us is necessary in order to know the athletes from this point of view.

According to Anghel (2009), anxiety represents an element of interest in the performance sport for both coaches and athletes, as well as for the auxiliary technical team. "Anxiety, defined by dictionaries as the fear without an object is in sport, an emotional state with causes well determined and is expressed as an adaptive-type reaction to situations which may constitute threats for the balance of the athlete's ego." (Epuran, 1990).

According to Karageorghis (2007), as symptoms, anxiety can be recognised on three levels: cognitive - by particular thought process, somatic - by physical response and behavioural - by patterns of behaviour.

Symptoms of anxiety should be accepted as part and parcel of the competition experience; which can be used to facilitate performance (Mackenzie, 2002). Gallwey (2000) explains the elements of interference that impact on performance: performance = Potential - Interference.

Generally, anxiety exists under two aspects (Spielberger, 1966) and should be made a distinction between the two: as a state - as being an immediate emotional state of fear and tension towards a specific situation and as a trait - representing rather a general tendency of anxiety. Thus, anxiety as a trait is a relatively stable characteristic of the individual.

## 2. Problem Statement

This paper analyzes and to compares the level of competitive anxiety among athletes in aerobic gymnastics and basketball, since anxiety level has an important role in coaches' decisions on sport training.

"Basketball, like any sport, is an emotional activity and a cognitive one, in which players have to make decisions or to execute in action using the knowledge that he or she already possess" (Abenza, Alarcon, Pinar & Urena, 2009, p.410) and as regards the components of psychological preparation in aerobics, "knowing the personality of each gymnast by the coach aims at highlighting the motor skills, the approach of certain elements and exercises that represent him. (Niculescu, 2008, p.131).

## 3. Research Questions

"Measuring anxiety in the field of sport has focused first on areas of sports psychology and of motor learning considering the recognized implications of the level of anxiety on motor performance." (Thomas & Nelson, 1997, p.256)

If we know the competitive anxiety level before competitions can we then lead the training of athletes? How does anxiety have an influence on the psychological part from the training sessions?

#### **4. Purpose of the Study**

This study aimed at identifying the level of anxiety to athletes in aerobic gymnastics and men's basketball, athletes who are in different training periods, establishing the role of anxiety in psychological training depending on the sport's specific and on the possibilities for optimizing of the sporting performances.

#### **5. Research Methods**

The study was carried out by applying the following methods: studying of scientific literature, observations made during the trainings and competitions, test method (Sport Competition Anxiety Test) and statistical method mathematics. The test was performed on two groups of athletes with ages between 15 and 21, one formed by basketball players - under 18 and the other of gymnasts.

Thus, this study was based on a survey questionnaire about the competitive anxiety which has been applied among two groups of athletes, determining the level of anxiety state felt by them before any specific sport competitions. A group was made up of 15 basketball players, category under 18, representing the men's basketball team Steaua Bucharest and the other group of 15 gymnasts (4 boys and 11 girls), junior and senior category forming the aerobics team of UNEFS Bucharest. The athletes' ages ranged between 15 and 21 years.

By analysing the athletes' responses to a series of statements about how she/he feels in a competitive situation it is possible to determine their level of anxiety. Such a test which provides such a functionality is the "Sport Competition Anxiety Test" (SCAT) (Martens et al.,1990), which has been elaborated by Martens in 1977 and is one of the most used questionnaires, used as an instrument of psychological testing of athletes for the purpose of determining anxiety as a trait of personality.

**Table 01.** Individual form – rating anxiety

<b>No</b>	<b>Question</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>
1.	Competing against others is socially enjoyable			
2.	Before I compete I feel uneasy			
3.	Before I compete I worry about not performing well			
4.	I am a good athlete when I compete			
5.	When I compete, I worry about making mistakes			
6.	Before I compete I am calm			
7.	Setting a goal is important when competing			
8.	Before I compete I get a queasy feeling in my stomach			
9.	Just before competing, I notice my heart beats faster than usual			
10.	I like to compete in games that demands a lot of physical energy			

11.	Before I compete I feel relaxed			
12.	Before I compete I am nervous			
13.	Team sports are more exciting than individual sports			
14.	I get nervous wanting to start the game			
15.	Before I compete I usually get uptight			

Subjects responded on a voluntary basis to a questionnaire made of 15 questions asked in the same order for all, being advised to answer to all questions as exactly as possible, they being in the competitive period, before certain competitions / matches.

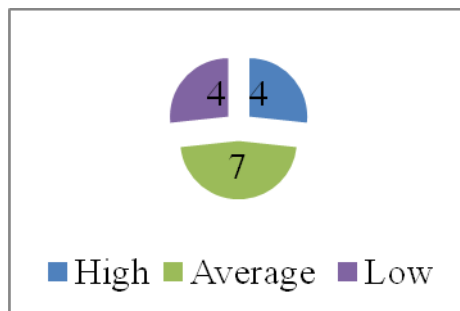
The sheet model which has been filled by each subject is shown below and is a translation after Martens (1990), adapted and amended by us.

**Table 02.** Score each question depending on the variant response

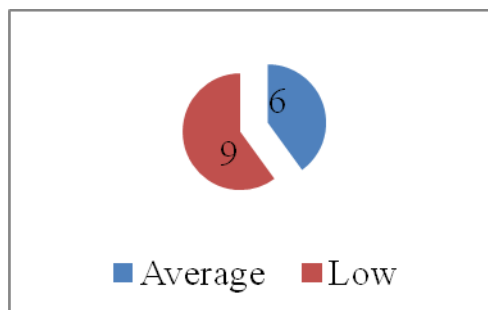
Question no	Rarely	Sometimes	Often
1	0	0	0
2	1	2	3
3	1	2	3
4	0	0	0
5	1	2	3
6	3	2	1
7	0	0	0
8	1	2	3
9	1	2	3
10	0	0	0
11	3	2	1
12	1	2	3
13	0	0	0
14	1	2	3
15	1	2	3

The score of "SCAT" questionnaire: less than 17 points = the level of anxiety state is low; between 17 and 24 points = the level of anxiety state is average; more than 24 points = the level of anxiety state is increased.

## 6. Findings



**Figure 01.** [The number of athletes on each level of anxiety in the aerobics group]



**Figure 02.** The number of athletes on each level of anxiety in the basketball group

**Table 03.** Centralization of results and age of the athletes

Sport	Athletes' name & surname (initials)	Age	Anxiety Test - score	Anxiety level	Sport	Athletes' name & surname (initials)	Age	Anxiety Test - score	Anxiety level
AEROBIC GYMNASTICS	B.D.M.	19	17	Average	BASKETBALL	C.D.	15	16	Low
	N.S.M.	16	21	Average		C.De.	17	20	Average
	C.S.N.	17	26	High		H.A.	15	18	Average
	C.M.T.C.	17	23	Average		S.V.	15	12	Low
	M.D.G.	16	19	Average		Ş.R.	16	16	Low
	D.M.I.I.	17	27	High		N.L.V.	18	15	Low
	O.A.	19	26	High		D.A.	15	10	Low
	S.L.S.	19	15	Low		A.A.	17	16	Low
	P.L.I.	20	16	Low		G.A.	16	10	Low
	B.G.	20	15	Low		B.M.	18	22	Average
	B.D.N.	20	18	Average		I.G.V.	17	21	Average
	G.B.M.	21	17	Average		F.E.F.	15	17	Average
	D.A.	19	23	Average		M.L.	15	19	Average
	S.S.	19	26	High		N.S.	15	16	Low
D.R.	19	16	Low	P.L.	16	14	Low		

Within the group of subjects - men's basketball team, their score fall in accordance with Table 3 and with the representation in figure no. 2 as follows: with a low level of anxiety - 9 athletes, with an average level of anxiety - 6 athletes. Average of the anxiety state level to this group is of 16.13 points, representing a low level of the anxiety state.

Within the group of subjects - the aerobics team, their score fall in accordance with Table 3 and with the representation in figure 1 as follows: with a low level of anxiety - 4 athletes, with an average level of anxiety - seven athletes and with a high level of anxiety - 4 athletes. Average of the anxiety state level to this group is of 20.33 points, representing an average level of the anxiety state.

As regards the average age, as a reference point in the psychological development of athletes, this is of 18,5 3 years (table no. 4) to the group of gymnasts falling as period between late adolescence and early youth, "age of searching how to balance personality" (Epuran & Horghidan, 1994, p.55) and the average age of the basketball players group is of 16 years, (table no. 4) who are in full stage of adolescence, the most complex age span during which personality is structured (Epuran & Horghidan, 1994, p.52).

In this study it was observed that boys had a lower level of competitive anxiety than girls, while comparing the two sports involved in testing it was found that athletes in men's basketball are less anxious than those of aerobic gymnastics, as shown by calculated averages.

**Table 04.** Descriptive and statistical analysis on the score and age in the two groups of athletes

Descriptive statistics		Mean	Standard Error	Median	Mode	Standard Deviation	Kurtosis	Skewness	Range	Minimum	Maximum
Basketball	score	16.13	0.93	16	16	3.62	-0.45	-0.23	12	10	22
	age	16	0.29	16	15	1.13	-0.97	0.67	3	15	18
Aerobics gymnastics	score	20.33	1.15	19	26	4.46	-1.62	0.3	12	15	27
	age	18.53	0.4	19	19	1.55	-0.92	-0.4	5	16	21

The analysis of competitive anxiety at the level of performance athletes has provided differentiated information in relation to the specific and characteristics of sports involved in testing (team sports, individual sports, the number and the manner of the competition, sex etc.) useful of coaches interested in organizing sports training, using the competitive anxiety management to obtain better results.

"Through the typology of the requests, performance sports requires from the person practising it a whole series of qualities which only an individual with a well-shaped personality may exhibit, reaching thus that the traits of personality to be considered both as results of the influence of sports activity, as well as prerequisites and conditions for an efficient activity."(Epuran & Horghidan, 1994, p.83)

The main problem of coaches and athletes is to control the level of anxiety in order to be able to avoid the negative effects of hypo and hyper-manifestation of it. The techniques of regulation and self-regulation of the psychological states, (relaxation, desensitization, psihoton training, mental training) known and used in practice, manage to solve issues in a satisfactory manner (Epuran, 1990, p.106).

## 7. Conclusion

The study provided information particularly important in the context in which the requirements of performance sport are becoming increasingly higher, in the case of a similar physical preparation and of a technical and tactical high level for the two teams involved in competitions, the difference being done by self-confidence, emotional balance, self-control, high capacity of self-regulation and concentration, all these facilitating the conduct of a match or contest, without errors, hesitation or deviations from the regulations.

From a theoretical point of view, according to Spielberger (1966), athletes with a high degree of trait anxiety will also have a higher level of state anxiety and consequently a higher risk of performing below his or her potential in the competition. These athletes are predisposed to perceive a wide range of competitive circumstances as threatening and to respond to them with states of anxiety and disproportionate magnitude with regard to demand (Weinberg & Gould, 1996)

According to Thomas & Nelson (1997), people with anxiety as an essential trait are inclined to perceive more situations as threatening and to respond with varying degrees of anxiety as a state.

The condition of anxiety presents a fundamental importance in the performance sports where can cause blockages at cognitive level or may cause strong somatic reactions because of the physical preparation and of the limited competitive experience of athletes.

In conclusion, the study has provided us with possibilities to optimize and/or to streamline the human performance by excellence in sports and the importance of shaping certain sports capabilities that can generate a very good yield regardless of the degree of difficulty or of the importance of a sports competition.

The knowledge and analysis of competitive anxiety level, psychomotor and sports experience should constitute useful tools for specialists, coaches, coordinators with the aim of adapting the communication, psychological preparation for competition and of individual training, as well as for managing sports training in the most effective manner.

## References

- Abenza, L., Alarcon, F., Pinar, M.I., Urena, N., (2009). Relationship between the anxiety and performance of a basketball team during competition, *Revista del Porte*, 18 – suppl.409-413. Retrieved from <http://www.rpd-online.com/article/view/681/631>
- Anghel, A.I., (2009). Analysis of competitive anxiety in rugby, *Sport Science Journal no 2*, National Research Institute for Sport, Bucharest, p.21-31
- Epuran, M. (1990). *Modeling of sports behavior*, Sport Tourism Press. Bucharest. p.106
- Epuran, M., Horghidan, V. (1994). *Psychology of Physical education*, Ecological University, National Academy Physical Education and Sports, Bucharest. p. 52, 55.
- Gallwey, T.W. (1999). *The Inner Game of Work*. New York, Random House, p.17, Retrieved from <https://www.slideshare.net/hydevk/the-inner-game-of-work-timothy-gallwey>
- Karageorghis, C. (2007). *Competition anxiety needn't get you down*, Peak Performance, 243. p. 4-7.
- Martens, R. et al. (1990). *Competitive Anxiety in Sport*, Leeds, Human Kinetics
- Niculescu, G. (2008). *Aerobics gymnastics – study*, Foundation Romania de Maine, Bucharest. p.131
- Spielberger, C.D. (1966). *Anxiety and behaviour*. Academic Press. New York.

- Thomas, J.R., Nelson, J.K., (1997). *Methodology of research in physical activity*, vol. II, Center for Research on Sports Issues, Bucharest. p.256
- Weinberg, R.S. & Gould, D. (1996). *Fundamentos de Psicología del Deporte y el Ejercicio Físico*. Barcelona. Ariel
- Mackenzie, B. (2002). Competitive Anxiety, Retrieved from: <https://www.brianmac.co.uk/companx.htm>.
- Mackenzie, B. (2001). Sport Competition Anxiety Test, Retrieved from: <https://www.brianmac.co.uk/scat.htm>