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# Study regarding the impact of trait anxiety on intersegmental coordination and topographical memory in junior football players

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## Abstract

The purpose of our study consists of analyzing the existing impact of trait anxiety on limbs coordination and upon topographical memory of junior football players. The Endler Multidimensional Anxiety Scales allows greater precision in assessing anxiety across situations. The RCMV and MT tests are included into the PSISELTEVA battery, developed by RQ Plus. The subjects who took part in this study are 21 junior football players, from Dinamo Bucharest Sports Club. Using the Spearman correlation there have been important relations highlighted between trait anxiety in socially-evaluative and physically dangerous situations and the resistance to time pressure coefficient, the complex reaction time and the topographical memory.

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*Keywords:* trait anxiety; intersegmental coordination; topographical memory; complex reaction time; resistance to time pressure.

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## 1. Introduction

Anxiety is a disorder of the affectivity, expressed by fear, unrest sensations, felt in absence of true causes able to cause them. It globally affects the human body, expressing at somatic, psychic and behavioral levels. The anxiety on short term and at moderate intensity level is not always noxious, being able to lead to the growth of the adapting potential and activity efficiency. But, on long term and at high intensity level, anxiety could become a very noxious phenomenon for the human being. A person suffering of generalized anxiety develops a special psychological functioning: his/her worries are excessive compared to the reality, he/she is afraid due to none objective reasons

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(Mitrache & Tüdös, 2011). With regard to the performance sport activity, the experts talk about an optimum anxiety area, which differs from a sportive person to another, within whose limits the athlete expresses his/her ability to obtain performance at a higher level and can register the best results (Krane, 1993). However, the specific manifestations of anxiety vary depending on a series of intrapersonal variables like the perception of the practice situation, athletic experience, ability of anticipation, personal expectations, whose result leads to the anxious behavior, specific in the case of a sport competition (Fisher & Zwart, 1982). Mullen, Lane & Hanton (2009) identified that low trait anxious athletes reported lower intensities of cognitive and somatic anxiety and higher self-confidence and interpreted these competitive state anxiety symptoms as more facilitative than high trait anxious athletes. Regarding the trait anxiety in dangerous situations, Kleinert (2002) highlights three dimensions of situations that cause injury anxiety: situations with low competency, situations with high importance and situations with loss of control. As a component part of the psychomotor domain, coordination is regarded (Hirtz, 2001) as one of the most challenging topics of investigation, relevant to sport psychologists and coaches, as well as a complex quality conditioning motor control capacity, motor learning capacity, adaptation and re-adaptation capacity, vigilance, all these conferring the athlete self-confidence, accuracy and efficiency when performing the specialized skills. Coordinated movements give to the subject the possibility to economize effort, motor action, in predictable situations (stereotypical) and unpredictable (of adjustment). Coordinated actions are movements carried out simultaneously with two or more limbs, characteristics of each movement serving successively to the adjustment of the others (Aniței, 2007). The coordination difficulties manifest through: temporal discrepancies between processing the information and executing the motor act, errors of non-synchronization of individual movements, order errors (inversions or substitutions of movements) or commutative errors (persevering with the anterior movement, interferences between movements). In football, a multiple experience of gestures is required, which shortens the learning and makes the training process more efficient (Cojocaru, 2002). Thus, becomes necessary to give a great importance to the development of a large repertory of gestures. Topographical memory requires retaining for a period of time a certain route and to use this information in a predetermined purpose. Such a task includes orientation in space, focusing, cognitive efficiency, risk taking, etc. The topographical memory represents a kind of knowledge stored in the form of spatial representations (Zlate, 1999), being essential for a better adaptation to the environment. Having a special importance in the psychomotor, mental organization, in organizing the external and internal space, along with the movement memory, is decisively influenced by the level and quality of the psychomotor stimulation in childhood, by systematically practicing physical exercises specific to various types of sports. Specialized literature (Epuran, Holdevici & Tonița, 2001) mentions the importance of spatial memory in team sports based on the understanding of the complex situation, reported to the athletes own action.

## **2. Objectives and Hypotheses**

### *2.1. Objectives*

The main purpose of our research was to investigate the impact of trait anxiety on intersegmental coordination, expressed through some psychomotor-related parameters (personal optimum rhythm, resistance to time pressure, perceptual-motor learning, mean of the latency time needed for a bi-segmental or multi-segmental response, resistance to disruptive factors) and upon topographical memory of the junior men football players.

## **3. Method**

### *2.2. Subjects*

The sample included 21 football players, aged between 14 and 15 years, from Dinamo Bucharest Sports Club. The football players represent the Junior Team II of Dinamo Bucharest.

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