

## ANXIETY AMONG EGYPTIAN ATHLETES AS MEASURED BY THE 'ARABIC PRECOMPETITIVE STATE ANXIETY INVENTORY'

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Review paper

### Abstract

The importance of anxiety in competitive sport situations has been recognized for many years, and its effects on performance has been investigated in a number of studies. The author conducted a series of studies about anxiety among Egyptian athletes using the Arabic Precompetitive State Anxiety Inventory (A-PSAI). In study I the results showed reliability and validity of the A-PSAI as indicated by test-retest, internal consistency and construct validity. In study II the results indicated that female athletes had significantly higher in both cognitive and somatic precompetitive anxiety than male athletes. Male and female athletes participating in gymnastics, swimming and track and field events had significantly higher in both cognitive and somatic precompetitive anxiety than athletes participating in basketball, volleyball and table tennis. The mean of the volleyball and basketball athletes showed the less propensity to experience precompetitive cognitive and somatic anxiety and the group of gymnastic seemed to be the most anxious group. It was concluded that there were differences in precompetitive cognitive and somatic state anxiety among Egyptian athletes with regard to sex and type of sport activity. The author suggests that in future research more attention to precompetitive state anxiety must be considered.

**Key words:** sport, psychology, cognitive and somatic anxiety, precompetitive state anxiety, measure

### Introduction

The concept of anxiety was clearly represented in ancient Egyptian hieroglyphics, and was recognized as a powerful motivator of behavior in the Old Testament, and in Greek and Roman literature. While medieval Arab philosophers considered anxiety to be a basic condition of human existence, the pervasive influence of anxiety on human behaviour was not generally recognized as an explicit problem until the twentieth century (Spielberger, 1985). Recently, the importance of anxiety in competitive sports situations has been recognized, and the effect of anxiety on Performance has been investigated in many studies (Allawy, 2002). A number of questionnaires, inventories, and other types of measures have been used to assess trait and state anxiety. (Allawy, 2007; Iman et al., 2009; Ostrow, 2005). Spielberger and his colleagues developed the State - Trait Anxiety Inventory (STAI) (Spielberger, 1983), to provide reliable, relatively brief self report scales for assessing state and trait anxiety in research and clinical practice, and in a number of studies the effect of the STAI on performance in competitive sports situations has been investigated (Spielberger, 1985, p.14).

Martens and his colleagues developed the Competitive State Anxiety Inventory-2 (CSAI-2) to assess the multidimensional nature of state anxiety. The inventory is composed of three dimensions of state anxiety that are assessed include cognitive state anxiety, somatic state anxiety and self confidence state (Martens, Vealy and Burton, 1990). The CSAI-2 was widely used by sport psychologists for measuring state anxiety associated with competition in sport (Cox, 2005). The present author conducted a series of studies about anxiety among Egyptian athletes using the

Arabic Precompetitive State Anxiety Inventory (A-PSAI), which consisted of two dimensions: Cognitive and somatic state anxiety. Cognitive state anxiety concerns the degree to which one worries or has negative thoughts, whereas somatic state anxiety concerns the moment-to-moment changes in perceived physiological activation (Weinberg and Gould, 2005). To ensure an adequate sampling of items with state anxiety content, many revised items were given to five professors of sport psychology who were asked to comment on the clarity of instructions, the test format, and the content of the individual items. Items with weak psychometric properties, or that were considered ambiguous or offensive were eliminated. The final set of 24 items, 12 for cognitive and 12 for somatic state anxiety for the A-PSAI were selected. In responding to the A-PSAI, subjects report how they feel before participating in an important competition by rating themselves on the following 4- point frequency scale: (1) Almost never; (2) Sometimes; (3) Often; (4) Almost always (Allawy, 2008).

### Study I - Purpose

The major goals of this study were to report evidence of the test- retest reliability, internal consistency and construct validity of the Arabic Precompetitive State Anxiety Inventory (A-PSAI).

### Methods

#### Subjects

Two hundred and sixty athletes (135 males, and 125 females) ranging from 18 to 27 years of age were randomly selected from sporting clubs in Egypt representing many sport activities.

### Procedures

To determine the test-retest reliability of the A-PSAI, the subjects were retested after a period of three weeks in almost the same conditions.

### Results

Results showed that the A-PSAI was stable as indicated by test-retest correlations,  $r = .69$  and  $r = .72$  for cognitive and somatic precompetitive state anxiety respectively. Evidence of the internal consistency of the A-PSAI was provided by the alpha coefficients, which were  $.80$  for cognitive and  $.83$  for somatic precompetitive state anxiety. Evidence of the construct validity of the A-PSAI was obtained in a sample of one hundred top level athletes (50 males and 50 females) representing many sport activities, who were first administered the A-PSAI with (Nonstressful) instructions. They were asked to respond according to how they would feel "just prior to an unimportant competition". They were then asked to respond according to how they believed they would feel "just prior to a very important and sensitive competition" (Stressful condition). Results showed that the mean scores in the No stressful condition were  $18.7$  (SD  $4.2$ ), and  $19.3$  (SD  $3.9$ ) for cognitive and somatic precompetitive state anxiety, while the mean scores in the Stressful condition were  $29.4$  (SD  $3.6$ ) and  $31.2$  (SD  $4.7$ ) for cognitive and somatic precompetitive state anxiety respectively, indicating that anxiety state scores are higher under the Stressful condition ( $P < .001$ ) in both cognitive and somatic prec. state anxiety.

### Recommendations

On the basis of the results the following recommendations are made: The Arabic Precompetitive State Anxiety Inventory (A-PSAI) appeared to provide reliable, internally consistent and valid scale for measuring precompetitive cognitive and somatic state anxiety in the Egyptian sport environment. The Egyptian sport psychologists and coaches can apply the A-PASI to study anxiety levels of the athletes, so that they can make every effort to keep the level on anxiety of athletes within reasonable limits. It can be noted that the optimal level of precompetitive state anxiety is associated with superior performance (Allawy, 2012).

### Study II - Purpose

This study was undertaken to determine (1) The differences in precompetitive state anxiety between Egyptian male and female athletes, (2) The differences in precompetitive state anxiety according to form of sport activity.

### Methods

#### Subjects

Two hundred and ten top level athletes ranging from 18 to 29 years of age were randomly selected from sport clubs in Egypt representing

seven different sport activities, (Contact sports: Basketball and handball, Non-contact sports: Volleyball and table tennis, Individual sports: Gymnastics, swimming and track and field events). They were 15 male and 15 female athletes from every sport activity.

#### Procedures

All subjects were administered the A-PSAI. They were asked to respond according to how they believed they would feel "the evening prior participating in a very important competition". The Analysis of Variance (ANOVA) was used to compare the different groups, and the t-test was used to determine between which means differences existed (Thomas and Nelson, 2005).

### Results

Results showed that the mean scores of the male athletes were  $31.7$  (SD  $3.6$ ) and  $30.9$  (SD  $2.9$ ), while the mean scores of the female athletes were  $35.8$  (SD  $5.2$ ) and  $34.2$  (SD  $4.3$ ) in cognitive and somatic precompetitive state anxiety respectively, indicating that female athletes were significantly higher in both cognitive and somatic precompetitive state anxiety than male athletes ( $P < .01$ ). The ANOVA showed that there were differences in cognitive and somatic precompetitive state anxiety among male subject groups. The t-test indicated that the individual sports group (Gymnastics, swimming and track and field events) scored significantly higher in both cognitive and somatic pre-competitive state anxiety than the contact sports group (Basketball and handball), and the non-contact sports group (Volleyball and table tennis), and there were no significant differences between contact and non-contact sport groups in both cognitive and somatic precompetitive state anxiety. The results indicated that there were significant differences among female subject groups in cognitive precompetitive state anxiety ( $F = 3.89, P < .05$ ), but they did not differ in somatic pre-competitive state anxiety ( $F = 1.92, P > .05$ ). The t-test indicated that the contact sports group scored significantly higher than the other two subject groups.

### Discussions and Recommendations

The results indicated that the Egyptian female athletes were higher than male athletes in cognitive and somatic pre-competitive state anxiety. In Egypt male sport psychologists and coaches are taking charge of both male and female athletes and they must be aware of this phenomenon. The results confirm that regulation of anxiety level of the female athletes needs more attention from the sport psychologists and coaches. They should select appropriate anxiety management to the female athletes to adopt coping strategies to prepare themselves for the forthcoming competition. Sport psychologists and coaches should be aware of assessing state anxiety prior to competition, because it may be distracted, or may actually alter responses by directing attention to emotional states (Hackfort and Schwenkmezger, 1993).

Raglin and Morris (1994) found that in most studies, predicted anxiety is assessed from one to five days before actual competition, accuracy seems to be lower with longer intervals. The question of whether one group of athletes, males or females, is higher or lower in cognitive or somatic pre-competitive state anxiety than another athlete group is important. For example, why were their differences in precompetitive state

anxiety among athletes according to sex and type of sport activity? Does this mean that sex or type of sports activity cause higher or lower anxiety state? Or, it may be that those personalities with initially specific traits are able to succeed in such form of sport activity? Or it may be that there is a reciprocal cause and effect relationship between these factors? Further studies could investigate if there are carryover effects.

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## ANKSIOZNOST MEĐU EGIPATSKIM SPORTAŠIMA MJERENA UPITNIKOM 'ARABIC PRECOMPETITIVE STATE ANXIETY INVENTORY'

### Sažetak

Važnost anksioznosti u situacijama natjecateljskog sporta prepoznata je prije mnogo godina, i učinci na izvedbu su proučavani u brojnim studijama. Autor je proveo seriju istraživanja o anksioznosti među egipatskim sportašima koristeći upitnik 'Arabic Precompetitive State Anxiety Inventory' (A-PSAI). U studiji I rezultati su pokazali pouzdanost i validnost A-PSAI skale indicirano modelom test-retest, internu konzistenciju i vrijednost konstrukcije. U studiji II rezultati pokazuju da sportašice imaju značajno više vrijednosti anksioznosti i u kognitivnoj i somatskoj sferi prednatjecanja nego sportaši muškarci. Muškarci i žene koji sudjeluju u gimnastičkim, plivačkim i atletskim natjecanjima imaju obje anksioznosti, i kognitivnu i somatsku prednatjecateljsku, značajno više nego košarkaši, odbojkaši i stolnotenisači. Vrijednosti koje iskazuju odbojkaši i košarkaši pokazuju manje izraženu i iskustvenu prednatjecateljsku i somatsku anksioznost i čini se da u gimnastičari najanksioznija grupa. Zaključeno je da postoje razlike u kognitivnom prednatjecateljskom i somatskom stanju anksioznosti među egipatskim sportašima u skladu sa spolom i aktivnošću. Predlažu se buduća istraživanja s više pozornosti prema prednatjecateljskoj anksioznosti.

**Ključne riječi:** sport, psihologija, kognitivna i somatska anksioznost, anksioznost prednatjecanja, mjerenje

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