

## The Comparison of Pre-Competition Anxiety and State Anger between Female and Male Volleyball Players

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**Abstract:** The main purpose of this study was to compare pre-competition anxiety and state anger between female and male volleyball players (university students). The statistical population consisted of all male and female volleyball players (n=214) who participated in Iran volleyball university matches. It must be noted that the questionnaires were distributed among whole statistical population either 30 minutes before competition started in the hall where competition was supposed to be held or at the time the athletes went to the hall to start the competition and finally 88 questionnaires were collected from male volleyball players and 82 questionnaires were collected from female ones. In this research, the CSAI-2R questionnaire was used to measure cognitive state anxiety, somatic state anxiety and self-confidence on a scale ranging from 1 = *not at all* to 4 = *very much so* in a competitive setting. The State-Trait Anger Expression Inventory (STAXI; Spielberger, 1991) was also used to provide a measure of the anger experience as an emotional state (state anger), the disposition towards anger as a personality trait (trait anger) and the expression of anger. K-S (P=0.05) was used to ascertain data normality. Descriptive statistics (mean, standard error), t test and Pearson coefficient were used to analyze the data (P=0.05). The results showed a significant difference in all pre-competition anxiety subscales: cognitive state anxiety (t=3.62), somatic state anxiety (t=4.76) and self-confidence (t=3.06) (P=0.05). Although there was no significant difference in trait anger (t=1.41, sig>0.05), there was a significant difference in state anger (t=2.15) and the expression of anger (3.67) (P=0.05).

**Key words:** Pre-competition anxiety % State anger % Volleyball players % Students

### INTRODUCTION

One of the most important issues which has attracted the attention of sport specialists and psychologists is to identify effective factors influencing anxiety and tension control before a competition so that athletes' performance can be facilitated [1]. Hanton (2004) considers cognitive anxiety as a constituent of cognitive preparation and believes that the emergence of negative thoughts and anxiety about performance, competition environment and competition results in athletes are of important indications of cognitive anxiety. Somatic anxiety appears in the form of pale skin, an increase in heartbeat and turmoil that makes athletes to show negative reactions. Eventually, self-confidence is the rate of athletes' ability to have excellent performance and suitable behaviors [2].

The results of various researches indicate that different factors are involved in pre-competition anxiety. Nelson *et al.* (2007) and Ivan (2002) believe that

competitive anxiety and stress in important competitions as well as delicate performances performed with numerous audiences weaken the performance [3, 4]. The results of findings of Pigozzi (2008) confirmed that an athlete's skill level is an important factor in controlling his/her competitive stresses and he believes that elite athletes who are able to control their competitive anxiety through mental skills (such as imagination, feeling control), have good motivation and self-confidence, but amateur athletes with high anxiety experience weak performance in competitions. [5]. In their investigations concerning the effects of competitive anxiety on performance and motivation of football players reported that elite football players due to familiarity with competitive anxiety control strategies possess optimum motivation and self-confidence, but amateur ones with high anxiety in competitions experience a significant decrease in their performance. The researches of Joel *et al.* (2009) and Cristina (2004) showed that the kind of sport, nature of

sport (individual or group-based) and gender of athletes are important factors affecting their performance. They stated that female athletes compared to male ones experience higher levels of mental and somatic anxiety [6,7]. But Bray *et al.* (2003) identify hosting and guest conditions as the most important factors causing anxiety in athletes [8]. Mamassis (2004) also identifies competitive anxiety as a factor in decreasing self-confidence and concentration in tennis players. Regarding two factors of suitable reaction and speed in tennis, competitive anxiety with negative effect on concentration could decrease precision and eventually lead to performance downfall in athletes [9]. Cerin (2003) believes that identification of the factors causing anxiety before competitions alone do not lead to achieving the goals considered by coaches and to optimizing performance, but a series of emotional states of athletes in sport environments should be considered [10]. Robazza *et al.* (2003) during their researches stated that the athletes of different sport fields, among emotional states, experience anger more than any other negative emotional states as a negative behavior which causes stress and aggressive states in them [11,12]. Maxwell (2004) believes that anger especially in contact sports (hockey, American football, boxing and karate) has a significant effect on creating motivation and performance of athletes [13]. The results of researches performed by Jones (2003) indicated that anger could have positive or negative effects on athletes' performance. He stated that high anger created by tension causes interference in concentration ability, information evaluation and feedback received from the coach, disorder in performance and emergence of wrong reactions by athletes. Totally, anger could decrease the possibility of achieving success through undermining reserved energy [14]. On the other hand, many athletes of Rugby state that they benefit from anger as a propellant for tackling, shoving and blocking the rival's movements [15]. Maxwell (2005) in another study investigated the effects of anger on the performance of drivers participating in rally competitions. The results specified that experienced drivers experienced low levels of anger before competitions and possessed lower tension and higher self-confidence compared to amateur drivers [15]. Self-confidence is another effective factor in athletes' performance. Researches performed by Mellalieu and S.D Neil (2006) indicated that self-confidence level of athletes that is due to a difference in their skill levels is the most effective variable in their performance; therefore, some strategies for increasing self-confidence should be delivered to athletes by the

coaches [16]. Hanton and Connaughton (2002) suggested that self-confidence would optimize athletes' performance by decreasing anger before competition and supporting them against tensions generated by external factors (audiences and players of rival team) [17]. Therefore, anger and anxiety before competitions could have negative and destructive effects on athletes' performance, or adversely could cause success in achieving the goals considered by the coach. So, regarding a lack of sufficient researches on the effects of gender on pre-competition anxiety, we have investigated and compared the level of anxiety before competition and anger in female and male volleyball players (university students).

## MATERIALS AND METHODS

Statistical population of the present research consisted of all male and female volleyball players (university students) ( $n=214$ ) who participated in volleyball competitions of Iran universities; 9 teams attended these competitions which were hosted by Mazandaran University (girls competitions) and Gilan University (boys competitions). After necessary arrangements with coaches and supervisors of teams, the athletes were asked to answer the questionnaires according to their feelings before the competition. It must be noted that the questionnaires were distributed among whole statistical population either 30 minutes before competition started in the hall where competition was supposed to be held or at the time the athletes went to the hall to start the competition and finally 88 questionnaires were collected from male volleyball players and 82 questionnaires were collected from female ones.

The instruments used for collecting the data consisted of:

- C **Competitive State Anxiety Inventory - 2 (CSAI):** in order to evaluate competitive anxiety level of subjects, this questionnaire was used. This inventory has 27 questions which evaluate three subscales of cognitive anxiety, somatic anxiety and self-confidence with Likert scale (1: null to 4: very much). Therefore, the scores of subjects ranged from 36 to 9 and high score indicates a higher level in each subscale. The validity of this questionnaire was confirmed by professors and the reliability was measured by Alpha Cronbach ( $\alpha=0.89$ ). Also, internal reliability of this questionnaire was reported by Peter *et al.* (2003) as 85.75, 0.0 and 0.83 respectively [18].

**C The Spielberger State-Trait Anger Expression Inventory (STAXI) (1991):** With 44 questions, this questionnaire also investigates anger level of athletes in the form of three subscales of emotional state of anger (state anger), trait anger (personality anxiety) and expression of anger in a 4-point Likert scale (1: never, 2: sometimes, 3: more often, 4: always). Validity of this questionnaire was confirmed by professors and its reliability was measured by Alpha Cronbach ( $\alpha=0.86$ ). Also, Ruize (2004) reported internal reliability of this questionnaire as  $r = 0.84$  [19].

In order to analyze the data, Kolmogorov-Smirnov test was used to ascertain the normal distribution of data ( $P > 0.05$ ). Then, descriptive statistics, t test and Pearson correlation coefficient were used ( $P \neq 0.05$ ).

## RESULTS

The results of data analysis showed that female volleyball players had higher mean scores in cognitive anxiety 21.86 and somatic anxiety 19.38 subscales compared to male ones 16.29 and 17.52, that is, an indicator for higher cognitive and somatic anxiety levels

in female volleyball players. But female volleyball players had higher mean scores in the self-confidence subscale (23.67) than that of male ones (20.35) and enjoyed higher self-confidence (Table 1).

Also, male volleyball players (20.39) compared to female ones 918.29) had higher trait behaviors towards anger (trait anxiety), but female group (13.57) had higher tendency towards expressing their anger than male group (11.14) (Table 2).

In the present research, the relationship between gender to competitive anxiety and anger were investigated (Table 3) and a significant relationship was observed between male players' competitive anxiety and that of female players.

Statistical findings of this research showed a significant difference in all subscales of competitive anxiety (cognitive anxiety  $t = 26.3$ , somatic anxiety  $t = 4.76$ ), self-confidence  $t = 3.06$ ) between male and female volleyball players ( $\text{sig} \neq 0.05$ ). But no significant difference was observed in trait anxiety subscale ( $t = 1.41$ ) ( $\text{sig} > 0.05$ ) (Table 2). Although no significant difference was observed in two subscales of state anxiety ( $t = 2.15$ ) and anger expression ( $t = 3.67$ ), female volleyball players had more tendency towards expressing their anger.

Table 1: mean scores of competitive anxiety subscales in male and female volleyball players

Subscales	Male volleyball players		female volleyball players		M. Differ	t	sig
	M	SD	M	SD			
Cognitive anxiety	21.86	2.41	17.52	1.24	4.34	3.26	0.002
Somatic anxiety	19.38	1.35	16.29	2.56	3.09	4.76	0.000
Self-confidence	23.67	2.59	20.35	1.21	3.32	3.06	0.000

Table 2: mean scores of sub scales of anger expression level of male and female volleyball players

	female volleyball players		male volleyball players		M. Differ	t	sig
	M	SD	M	SD			
state anxiety (acute)	17.52	2.63	15.34	2.09	2.18	2.15	0.023
trait anxiety (chronic)	18.29	3.84	20.39	3.61	-2.1	1.41	0.39
anger expression	13.57	2.24	11.14	1.26	2.43	3.67	0.014

(0.05  $p=$ )

Table 3: The relationship between competitive anxiety and anger in male and female volleyball players

	r	
	female volleyball players	male volleyball players
anger	0.09	0.04
competitive anxiety	0.13*	0.11*

(0.05) \*  $p=$

## DISCUSSION

Different research results imply that competitive anxiety is the source of decrease in performance especially in amateur athletes. Elite athletes by controlling their competitive anxiety through mental skills (such as imagination, feeling control) have higher motivation and self-confidence, but amateur ones experience weak performance through an increase in anxiety during competitions [20]. In the present research, student volleyball players had an average level of competitive anxiety and anger before competitions. Our results indicated a significant difference in all pre-competition anxieties between male and female volleyball players.

In an investigation into the effects of competitive anxiety and self-confidence on individual and team-based athletes, Eric (1996) reported that no significant relationship between male and female athletes in competitive anxiety and self-confidence level. But when they were investigated based on the nature of sport field (individual and group-based), it became clear that female athletes had higher cognitive and somatic anxiety and lower self-confidence compared to male ones [21]. These results are consistent with the results of the present research. Different competitive anxiety and anger levels may depend on the level and the rank at which the competitions are held, but this research did not investigate these variables. Research results indicated that pre-competition anxiety and high anger levels have no positive effect on performance of volleyball players; this result is not consistent with Robazza (2006), Cerin (2003) and Cludio (2007) who stated that competitive anxiety and anger could have positive effects on the performance of contact athletes [22-24]. Peares (2007) also studied these factors in football players and reported that activity level (professional or amateur); type of sport (individual or group-based) as well as activity history and experience are of important and effective factors influencing pre-competition anxiety [25]. Gualberto (2008) believes that those athletes who experience higher levels of competitive anxiety would experience early burnout in their sport field and this factor causes stress due to expressing bad performance by the athlete [26]. He believes that as the athletes have the ability to control the conditions causing anger and anxiety, they could use this additional energy to delay exhaustion, to attempt more to achieve those goals considered by the coach, to increase their awareness level and correct concentration. Craft (2003) identified personal traits of athletes (type A, B) and

the rate of personal emotion control as the most important factors influencing pre-competition anxiety and believes that these factors greatly create competitive anxiety [27]. But Roys (2004) confirmed the positive effects of anger on the performance of professional karate players; he also reported that anxiety and anger levels relate to personal traits of athletes. When the athletes find the source of anger inside them, they can control stress and anxiety using proper strategies such as positive self-talk, deep breath and imagination of excellent performance. But when the source of anger is external (audience and sensitivity of competition), the athletes must use and apply their experience, otherwise the possibility of achieving success would decrease. In a similar research investigated the causes of success and its relationship to performance and mental traits of cricket players. He reported a mutual relationship between performance level and control of negative excitements, tension and anger in top athletes compared to other athletes [28]. Jones (2002) also reported that professional athletes due to high self-confidence and experience compared to amateur ones, enjoy different mental and cognitive skills in order to display excellent performance, but amateur ones use mental skills and imagination just to decrease their anxiety before competition and to feel relaxed. Shinke R. and Costa (2001) who investigated the causes of failure in athletes and reasons of weak performance in important competitions reported that lack of experience in these competitions and lack of concentration and sufficient self-confidence are of the most important factors which decrease performance and create unusual behaviors and states in athletes [29]. Different factors such as increasing the experience of athletes in different tournaments, teaching to insist on more activities or adversely decreasing the activities and energy economics in different conditions would increase their efficacy and performance. Based on a research, Jones (1995) reported that exercising mental skills and using them during competition is the most applicable strategy for controlling factors that cause failure in athletes' performance. His research showed that the athletes, who have the ability to control their tension before competition and to deal with stressful conditions, would have higher success in achieving the goals considered and maintained by the coach [30]. Therefore, it seems that different mental skills would have positive effects on athletes' performance and also would modify and decrease their anxiety before competition. So, it seems that the athletes of different sport fields experience different levels of anxiety and

anger according to the level of skills and experience they possess in important competitions. Therefore, the coaches should maintain applicable strategies in exercise sessions in order to control and modify the tension and anxiety before competition in a planned and regular manner.

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