A Comparison of Anxiety Levels Between Athletes in Competitive Team and Individual Sports

Fouad A Kamal, Ph.D
University of United
Arab Emirates

Bernard F. Booth, Ph.D.
University of Ottawa

Eptehag Ahmed Abdelaal, PhD
Helwan University

Introduction

Anxiety has been studied under two forms, trait anxiety where individuals have been found to react differently to the same timuli, and state anxiety, which is a product of over activation of the autonomic system, (Martens 1977) Trait anxiety has been described as a pre-disposition of individuals to perceive certain environmental stimuli as either threatening or non-threatening causing variable levels of state anxiety. Trait and state are, therefore, related, but the individual's predisposition to trigger varying degrees of activity in the central nervous system may explain why certain sports seem to attract athletes who are more readily disposed to exhibit higher state anxiety levels than other sports.

The State-Trait anxiety theory predicts that subjects scoring highly in anxiety would likely score even more highly in a state anxiety test if they believed their situation was becoming more threatening or, conversely, as they felt themselves becoming increasingly vulnerable . High trait anxiety subjects have been found to perceive threats to their self esteem as more threatening than low trait anxiety subjects. (Spielberger 1971)

Anxiety and Sport

Sport can play the role of a stressor by providing opportunities for both success and failure. Since a stressor, as defined by Spielberger (1971), refers to a perceived degree of objective physical or psychological danger, then sport would provide important opportunities for studying the response of athlete to physical and psychological danger.

Anxiety appears to play an important role in determining success in sport, whether or not to continue playing sport, or even in determining who gets injured in sport. Pierce (1980) reported that a large number of subjects had stated that anxiety had prevented them from participating in competitive sport. (Pierce 1980) Hence, there are many variables to be investigated which link arousal, or anxiety predisposition, to success or failure in sport participation.

Optimal levels of Arousal

Much of the literature on anxiety has focused on determining what the optimal level of arousal threshold is in promoting efficient individual performance. Drive theory predicted that an increased performance required increases in arousal, but this theory was found to be unsubstantiated (Martens 1990). An important research threshold was crossed with the findings of Yerkes and Dodson (1980) who showed that performance level increases as arousal or state anxiety increases, but only to an optimal point. After this optimal point has been reached, any increase in arousal results in decreased performance. It is

feasible that each athlete has their own optimal level of arousal for optimal functioning. If this is so, it would encourage athletes to monitor their own level of arousal so that they could peak or reach their optimal level, at a time appropriate for competition. Obviously, monitoring individual trait anxiety levels requires an individual-centred approach. Yerkes and Dodson (1980) contributed the idea that each sport activity determines its own optimal level of arousal. The individual-centred approach however links the need to monitor individual arousal with activity-determined arousal levels.

Individual Arousal Assessment

Assessing individual arousal effectiveness is a complex venture, since athletes have varying levels of arousal effectiveness. Some athletes may perform their best when highly aroused, others when relaxed, and others when only moderately aroused. A second variation factor is that some athletes have been found to monitor their perceptual cues less effectively when aroused. At the lower levels of arousal, irrelevant cues tend to be ignored but as the level of arousal rises, even relevant cues are ignored causing a deterioration in performance (Furst and Tenenbaum (1986). As arousal-control is being lost negative, self-destructive thoughts often replace positive ones and so important task relevant cues are bypassed in favour of negative, irrelevant cues. Oxendine (1970) argued that different sport environments will require different levels of arousal for effective performance: football blocking and weight-lifting requiring extremely high

levels of arousal while golf-putting, and archery would require only low levels of arousal or state anxiety for optimal performance.

Level of arousal is also dependent upon whether the sporting activity is competitive or recreational, a practice session or a game context. Klavora (1974) found that state anxiety was lower in preseason practice than just prior to the competitive season. Marathoners and tennis players for example, experience their highest state anxiety levels just prior to competition, but when the event is completed, state anxiety level decreases irrespective of the sport. However, the amount of decrease often depends on the predetermined level of the individual to state anxiety over the outcome of the competition.

Individual sport athletes tend to be more aware of their level of physiological arousal, and to score more highly than team sport athletes on state anxiety inventory tests. According to Furst and Tenenbaum (1986), this phenomenon can be explained because individual sport athletes bear a greater share of the responsibility for their performance than team sport athletes, who can merge a poor personal performance within the team as a whole. Nevertheless, certain team sport athletes may experience high state anxiety due to social isolation within the team, or feelings of unfair treatment by a coach, for example. Hence, there are social contexts within a team sport that may tend to individualize a set of negative experiences for a team player. Group role-status relationships may lead indirectly to a social comparison process

that results in fluctuating interpersonal state anxiety levels among team sport athletes. Hence, there is a basis for arguing that opportunities do exist in team sports for high state anxiety levels. (Furst and Tenenbaum 1986)

Purpose of the study

The purpose of this study is to compare anxiety levels of individual athletes and team athletes. It is hypothesised that individual athletes will have the same level of trait anxiety as team athletes in competitive sport, and individual athletes will have the same level of state anxiety as team athletes in competitive sport.

Method

The State-Trait Method Anxiety Inventory (Spielberger 1970) was administered to eighty male university athletes between the ages of nineteen and twenty six years. All of the athletes were competing in division one club level sports or at the university level. Forty of these athletes were involved in the team sports of football, basket ball, and soccer and forty in the individual sports of golf, cross country skiing, power lifting, sprinting, long distance running, and canoeing.

The STAI was chosen because it was easily administered, having been condensed to forty items. It was objectively scored, and because of its usage in a number of recent studies. This instrument was developed to provide reliable but brief self-report measures on State and Trait Anxiety.

Each of the 20 STAI trait anxiety items, correlated significantly with total scores on the MAS and the IPAT anxiety scales. The S-Anxiety scale had two important criteria in the selection of items namely construct validity, and strong internal consistency. It has been used in over 2500 studies and in over 40 languages. This instrument was distributed anonymously during the playing season of the athletes. It was administered as close to an actual contest as feasible. The TAI was administered at the same time but the subjects were asked to answer the questions as to how they generally felt each day when no known anxiety or stress was evident. Each answer was ranked one to four and tallied on the appropriate scoring sheets. These totals were used in t-tests to discover whether significant differences existed between individual sport athletes and team sport athletes.

Results

Trait Anxiety Levels

A t-test was administered to learn within any significance existed between team and individual athletes. No significant difference was revealed with respect to trait anxiety levels.

State Anxiety Levels

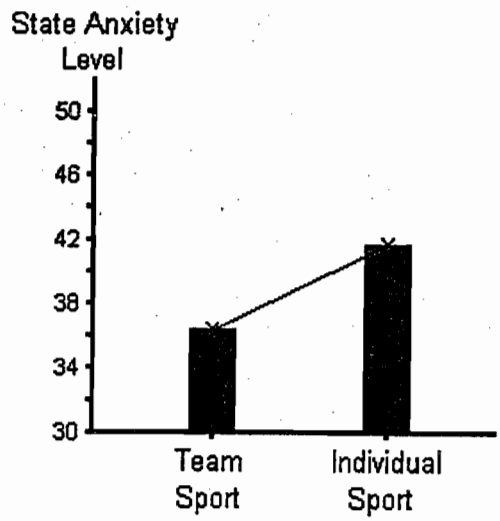
A t-test did reveal a significant difference in state anxiety level between team sport athletes and individual sport athletes, since t=3.23 and the critical t=1.99 with a degree of freedom of 78 at alpha of 0.5. State anxiety levels in individual athletes is significantly higher than in team sport athletes since the mean of individual sport athletes at 41.75 and for the team athletes at

Table 1

	Team	Individual
Mean	36.50	41.75
Standard Deviation	5.72	8.54

Mean and Standard Deviation of State Anxiety Level for both Team Sport Athletes and Individual Sport Athletes

Figure 1



Level of State Anxiety between Team Sport Athletes and Individual Sport Athletes

36.5. (See figure 1) See table I for the mean and standard deviation scores for both groups.

Discussion

The findings of the study support the work of Martens (1990) who found that while initial t- tests showed no significant difference in competitive trait anxiety, when he compared individual to team athletes, individual sport athletes displayed significantly higher levels of state anxiety.

The higher state anxiety levels of individual sport athletes can be explained by a greater threat of evaluation and a minimising of the diffusing of responsibility found in most team sports.

Recommendation

Athletes need to learn how to cope effectively with stress. Research which focuses on the social context of sport competition can help to unmask the mystery of why athletes feel the way they do. Research can help them to focus objectively on the stresses involved. By focusing on the cause of the stress, athletes can begin to see how the context of sport changes, and that their performance is really a question of learning to recognize these changes and how to deal with them. Identifying differences in the social contexts of individual and team sports can help individual athletes realize that their sources of anxiety are different to those of the team player. Further research needs to focus on the personality dimension of recruitment into team and individual sports.

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