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Investigation of the Effectiveness of Progressive Muscle Relaxation and Imagery in Reducing Anxiety in athletics

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ABSTRACT

Because the stressors inherent in sport often create physical tension in athletes, physical relaxation techniques may be useful to help athletes manage their physical energy levels to allow them to perform their best. The present research is a field experiment. The statistic society of the research was the players who had basic activity in Boushehr City. They were between 10 to 14 years old, 30 persons identified among them who had state anxiety. They settled randomly into three experimental groups: progressive muscle relaxation, Imagery relaxation, and control group. Each group included 10 persons who were under experimental intermediation for 8 weeks. The tools of anxiety evaluation in these persons, was the anxiety test of (CSAI- 2). This test made by Martens et al. (1990), and evaluates cognition and somatic dimensions of anxiety. This test has high reliability and validity. To instruct relaxation, it has used of Jacobsen's progressive relaxation and imagery relaxation.The results showed significant differences between experimental and evidence groups. The t-test had done between progressive relaxation group and evidence group showed that the anxiety in progressive relaxation group after test was lower than evidence group ($p<0.001$). And there was significant difference between mental relaxation group and control group. That is, the difference of the average of their anxiety after test was significantly lower than evidence group ($p<0.001$). Furthermore, the variance analysis test showed that there is a significant difference between experimental groups and control group. Also, there was significant difference between muscle relaxation group and imagery relaxation group in somatic scale. Whereas, there was no significant difference in cognition dimension and self- confidence scales. The results of the research showed that relaxation methods are effective in both muscle and imagery forms to decrease anxiety. In this field, muscle relaxation methods are more efficient in decline somatic anxiety. As the whole, according to the findings of this research, we should start psychological probations from childhood. Future researches can determine more perspectives in this field.

KEYWORDS: Anxiety, Imagery Relaxation, Progressive Muscle Relaxation.

INTRODUCTION

Research concurs that successful elite athletes regularly use relaxation techniques to manage their physical energy (Durand-Bush &Salmela, 2002, Gould, Finch, et al., 1993).With respect to coping strategies, it is important to distinguish between two types of anxiety, state and trait. Spielberger (1972) defined state anxiety as a transit, commensurate with the strength of fear eliciting cue. Research shows that state anxiety actually consists of two subcomponents. 1) Cognitive state anxiety is characterized by worry and emotional distress. 2) Somatic state anxiety is more physiologically based and is manifested through physical symptoms such as rapid heartbeat, shortness of breath, and clammy hands. Trait anxiety is more enduring than state anxiety (Spielberger, 1972). Persons with trait anxiety (A- trait persons) project a profile that reflects proneness to nonspecific anxiety. One theoretical formulation that has guided research in this area has been proposed by Martens, and et al., (1975). The theory posits that state anxiety registered by a person in a competitive situation is determined by the person's perception of the likelihood of success. Physical relaxation strategies specifically targeted for athletes experiencing somatic anxiety were more effective than cognitive relaxation strategies in reducing this type of anxiety (Maynard, Hemmings, &Warwick- Evans, 1995). There is a growing consensus in applied sport psychology that prediction of athletic performance should be based on multiple pleasant (positively toned) and unpleasant (negatively toned) emotions rather than only on precompetition anxiety (Cerin et at., 1993, 1997; Robazza, 2006).Roberts(1986) was the first to suggest that athletes adopting an ego orientation may experience anxiety as a function of whether or not they believe they can demonstrate sufficient competence in an achievement context. Anxiety should be less likely with a task orientation, because an individual's self- worth is not threatened. Research has generally supported the tenets of goal theory (Robert, 2001). The constructs of anxiety and depression are linked in that they are concepts typically included under the more general rubric of

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affect or *Mood* (specifically, negative mood). Mood, according to Lazarus (1991), represents a transient state, whereas affect represents something more enduring. However, given that affect and mood are often used interchangeably, and to remain consistent with the current exercise literature, depression, anxiety, and positive and negative mood are all included under the rubrid of mood.

Anxiety is an unpleasant emotional state associated with a negative form of cognitive appraisal typified by worry, self- doubt, and apprehension and psychophysiological responses (e.g., hart and respiration rate, sweating, trembling, weakness and fatigue). This emotional state may be in anticipation of unreal or imagined danger, powerlessness, apprehension, and tension, ostensibly resulting from unrecognized intrapsychic conflict. Task orientation has been negatively associated with precompetitive anxiety (Vealey&Greenleaf,2006), and concerns about mistakes and parental criticisms (Hall & Kerr, 1997; Hall, Kerr, & Matthews, 1998).An ego orientation, on the other hand, has been positively related to state and trait anxiety (Newton &Duda, 1992; White&Zellner, 1996).

Although precompetition anxiety is an important stress related emotion, it is still only part of the emotional mixthat influences athletic performance. Determining the interactive effects of emotions enhancing and impairing sporting activity is crucial for an accurate prediction of emotion- performance relationships. In this case, a high probability of individually successful performance is expected when combined maximum enhancing and minimum impairing effects are observed. On the other hand, a high probability of individually average and poor performance is expected when a combination of enhancing and high impairing effected. Finally, a high probability of poor performance is expected when low enhancing and high inhibitory effects are observed. Research indicates that successful elite athletes (Durand-Bush &Salmela, 2002) and coaches use mental training techniques and strategies to help them achieve success in sport.

Comprehensive reviews of the mental training literature have supported the effectiveness of mental training in enhancing the performance of athletes (Greenspan &Feltz, 1989).Because the stressors inherent in sport often create physical tension in athletes, physical relaxation techniques may be useful to help athletes manage their physical energy levels to allow them to perform their best. Research concurs that successful elite athletes regularly use relaxation techniques to manage their physical energy (Durand – Bush &Salmela, 2002; Gould, Eklund, et al., 1993).

With respect to coping strategies, it is important to distinguish between two types of anxiety, state and trait. Spielberger (1972) defined state anxiety as a transit, commensurate with the strength of fear eliciting cue. A professional soccer player who has never before played at a stadium may be overwhelmed by the crowds. And performance may be adversely affected as a result. Research shows that state anxiety actually consists of two subcomponents. 1) Cognitive state anxiety is characterized by worry and emotional distress. 2) Somatic state anxiety is more physiologically based and is manifested through physical symptoms such as rapid heartbeat, shortness of breath, and clammy hands. Trait anxiety is more enduring than state anxiety (Spielberger, 1972). Persons with trait anxiety (A- trait persons) project a profile that reflects proneness to nonspecific anxiety. One theoretical formulation that has guided research in this area has been proposed by Martens, and et al., (1990). The theory posits that state anxiety registered by a person in a competitive situation is determined by the persons perception of the likelihood of success. Physical relaxation strategies specifically targeted for athletes experiencing somatic anxiety were more effective than cognitive relaxation strategies in reducing this type of anxiety.

2. METHOD

The research design is a simi experimental study. The statistic society of the research was the players who had basic activity in Boushehr City. They were between 10 to 14 years old, 30 persons identified among them who had state anxiety. They settled randomly into three experimental groups: progressive muscle relaxation, Imagery relaxation, and control group. Each group included 10 persons who were under experimental intermediation for 8 weeks. The experimental groups had educated for 10 sessions and each session was 30 minutes. The used method was progressive muscle relaxation of Jacobsen; this method focuses on 17 muscles, and by dominance on education become limited. In mental imagery method which confirmed by the researcher, it has used of imagination pleasant images. Evidence group had no specific education. The three groups had pre-test and post- test. The tools of anxiety evaluation in these persons, was the anxiety test of (CSAI- 2). This test made by Martens et al. (1990), and evaluates cognition and somatic dimensions of anxiety. This test has high reliability and validity. The response scale ranged from- 3 (" very debilitative") to + 3 ("very facilitative"), so that possible direction scores on the CSAI-2 Subscales ranged from – 27 to + 27.

RESULTS

To evaluate the research hypotheses, it has used of MANOVA analysis. The results of MANOVA analysis showed that, in general, there is a significant difference between the variables of the research (general

situational anxiety, cognitive state anxiety, physical state anxiety, and self- confidence) in experimental groups of muscle relaxation and imagery relaxation and the evidence group.

Table 1**:** the results of multi variable variance analysis, anxiety states in experimental and evidence groups

Variable	Sum squares	df	Average of squares	f	p	Effect size
cognition	416.26	2	208.13	108.90	0.001	0.89
physical	1659.46	2	829.73	492.36	0.001	0.97
self- confidence	345.80	2	172.90	109.84	0.001	0.89
total	7141.40	2	3570.70	243.58	0.001	0.94

To evaluate more difference in MANOVA text it had used of unilateral variance analysis. The results of the unilateral variance analysis showed that there is a significant difference between general state anxiety in experimental groups of muscle relaxation and imagery relaxation and the evidence group (f=243. 58,P<0.001). Also, there is a significant difference between cognitive state anxiety in the three groups (f=108.90, P<0.001). Of course, there was significant difference between physical state anxiety of the three groups too (F=492.36, P<0.001). Ultimately, there was a significant difference between state self- confidence in the three groups (f=109.84, P<0.001). Because the results of the unilateral variance analysis was significant, it has used of Tukey test to evaluate the difference. The results of Tukey test hasshow in the following table:

Table 2:summary of the results of tukey test to evaluate the difference of the averages

Group	Cognitive state anxiety	Physical state anxiety	State self- confidence anxiety	General state anxiety
Muscle relaxation	16.20	13.50	15.20	44.90
Mental imagery	16.40	21.90 *	15.40	46.50
Evidence group	24.20 *	31.70 *	22.50 *	78.40 *

*P<0.001

As you see in the above table, there is difference between the average of cognitive state anxiety in experimental groups of muscle relaxation and imagery relaxation and the evidence group. Also, these differences in State self- confidence anxiety and General state anxiety between experimental and evidence group. There was also significant difference in physical state anxiety between groups of muscle relaxation and evidence group of mental imagery and evidence group.

4. DISCUSSION

The results of the research showed that relaxation methods are effective in both muscle and imagery forms to decrease anxiety. In this field, muscle relaxation methods are more efficient in decline somatic anxiety. Because many physical activity setting provide opportunities for public scrutiny and evaluation (e.g., sport competitions, group exercise classes), a self- presentational perspective can valuable for studying and understanding specific types of social anxiety that are experienced in these contexts. Indeed, in sport, a self-presentational perspective has been applied to study and understand sport competition anxiety. Using this perspective, competitive anxiety is conceptualized as a subclass of social anxiety that is specific to sport competitive anxiety that is specific to sport competition (Leary; 1992).

In studies of the relationships between sport competition anxiety and measures of self- presentational constructs, competitive trait anxiety has been shown to correlate with social physique anxiety and physical self-presentation confidence (Martin & Mack, 1996).Other studies have shown that self – presentational concerns are more strongly related to cognitive than somatic trait anxiety (Hudson & Williams, 2001).Another form of social anxiety with relevance in physical activity contexts is social physique anxiety (SPA). Social physique anxiety is the anxiety experienced in response to the real or imagined evaluation of one's body by others. Together, these studies fit nicely with Leary's (1992) conceptualization of competitive anxiety as a subclass of social anxiety. Research has substantiated that mental training programs increase the importance that athletes place on using mental training techniques and strategies, as well as their intentions to use these techniques and strategies.

Physical relaxation strategies specifically targeted for athletes experiencing somatic anxiety were more effective than cognitive relaxation strategies in reducing this type of anxiety (Maynard and cotton, 1993). As the whole, according to the findings of this research, we should start psychological probations from childhood. Future researches can determine more perspectives in this field.

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