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**Shilpi Jain**  
Ph.D. Research Scholar Dept. of  
Physical Education & Sports  
Sciences, Univ. of Delhi, India.

**Wazir Singh Phogat**  
National Coach,  
Athletics Federation of India  
III<sup>rd</sup> Lusofonia Games Athletics,  
India.

**Dr. Pardeep Kumar**  
Associate Professor  
University of Delhi, India.

**Correspondence:**  
**Shilpi Jain**  
Ph.D. Research Scholar Dept. of  
Physical Education & Sports  
Sciences, Univ. of Delhi, India.

## Interactive effect of mental skills training and anxiety on Indian athlete's performance

Shilpi Jain, Wazir Singh Phogat, Dr. Pardeep Kumar

### Abstract

This study examined the mental skill and competitive anxiety level as well as their relationship in Indian athlete's performance during competition. The totals of thirty eight (38) athletes of International and National level were selected to measure the correlation between variables of **Ottawa Mental Skills Assessment Tools (version 3)** with one weak difference and the relationship between **Competitive State Anxiety Inventory-2D** and **Ottawa Mental Skills Assessment Tools (version 3)** with the help of Pearson's Correlation. The responses given by athletes on mental skills questionnaire in Hindi and English language, which assessed 48 questions based on foundation skills, psychosomatic skills and cognitive skills. In other hand the responses of athletes on mental skills and competitive anxiety questionnaire in Hindi and English language assessed cognitive anxiety, somatic anxiety and self-confidence. According to the results and finding of this study, it is recommended that coaches must use mental skills during training for their athlete's performance which helpful for the athlete's to facilitate the performance and reduce the anxiety level during competition and create a positive approach's for their goal attainment.

This study revealed that Mental Skills are helpful to established positive approaches in athletes in relations to their performance. The statistical analysis uses define the Reliability of **Ottawa Mental Skills Assessment Tool -3** skills and relationship between **OMSAT-3** and **CSAI-2D** on Indian population. The Pearson's Correlation method used with Test-Retest on athletes which measures significant relationship between 3 skills of mental skill tool and Person's Product Moment Correlation also used on Indian athlete's performance which measures the significant relationship between mental skills and competitive anxiety.

**Keywords:** OMSAT-3, CSAI-2D, Athletics athletes

### 1. Introduction

The increase in the performance has been the basic need or what dreamed by all athletes to stand out in their respective sports. Athletes train hard to improve their skills and talents regardless of the time they take to do so. A few years ago, athletes only enrol themselves in a few sports in the school level as a routine. Now, athletes choose to compete in one of may be two types of sport. In certain cases, some athletes in secondary school focus on only one particular sport.

Psychology is the newest science, what needs to be trained and taught to well known or understand. Psychology is the service which provides step-by-step process for training the positive mental skills and reducing anxiety that will improve capabilities using the convenience of individual's.

Psychological skills or mental skills have been essential to organized interventions, typically in health and their supporting contexts, where in systematic training of psychological skills takes place.

#### 1.1 Anxiety

Competitive anxiety has been one of the most thoroughly inspected topics in sport psychology literature (Khodayari B., *et. al.*, 2011) [2]. Anxiety is defined as feelings of nervousness and tension which caused by the environment or surrounding expectation that is related to 'arousal'. Those demands are usually so stressful and thus causing an imbalance between the demands and the athlete's ability to fulfil the expectation. (Gould, Greenleaf, & Krane, 2002)

The demand of environment sorts the conditions who places high stress loads on the individual during competition. The stress presented in competition usually elicits competitive anxiety in athletes, supplying an additional element for them to manage. When anxiety is not directed

or construed correctly, athletes lose control and performance levels. To increase in performance the foundation need has been dreamed by all athletes to stand out in their respective sports.

When anxiety is not managed or explained correctly, athletes lose control and their performance levels decrease (Weinberg, R.S. and D. Gould, 2010) [5].

**1.2 Mental Skills**

Mental skills help to create and enhance individual and team spirit ‘awareness’, which leads to better team awareness. Mental skills help individuals’ to learn to be aware of personally do well and keep doing more of learn ‘why’ we learn more to improve our self and ‘how’ to be better than before, reach a higher personal standard and performance as well as needed to aware personally themselves and others.

Many of the athletes are registered and dedicate their whole life for training and focus under exclusive or elite team to increases their performance to get or make themselves as the professional level. These developing are not only a hope among athletes but to parents and coaches. Unfortunately, high hope also increases the stress on the athletes and it shows a close relationship with high anxiety. Dealing with these high stressful situations coaches uses mental skills to reduce or solve the problems of athletes regarding their performance.

Among the popular coping strategies used by athletes to deal with anxiety are goal-setting, breath control, imagery, positive self-talk, focus on the present, progressive relaxation, biofeedback, autogenic training, meditation and thought stopping (Mandana Sangari, *et. al.*, 2012) [3].

**1.3 Purpose of Study**

The purpose of the study was to examine the relationship between mental skills and anxiety interpretation on Indian athletes. The researcher was found the direction of the athletes’ anxiety interpretation, are able to interpret their anxiety to a positive direction that will facilitate their performance or will it be debilitating and would lead to a decrease in their performance.

**2. Methodology**

**2.1 Participants**

The Indian elite level athletes (N=38) age ranging from 17 years to 26 years were selected for the present study. At the time of collection of the data the subjects were attending Junior National coaching camp of Athletics in the centre of SAI at Sonapat, Haryana and National coaching camp of III<sup>rd</sup> Lusofonia Games 2014 of Athletics in Goa, India.

**2.2 Instrument**

In the present study two standardized questionnaire have been used to exam the status of research work.

First we have used Ottawa Mental Skills Assessment Tool -3 (OMSAT-3) of Durand-Bush and colleagues (2001) uses as the independent variable, which includes:-

1. **Foundation Skills-** consist of sub variables-
  - Goal Setting
  - Commitment and
  - Belief
2. **Affective or Psychological Skills-** sub variables-
  - Stress Control
  - Fear Control
  - Relaxation and
  - Energizing

**3. Cognitive Skills-** sub variables-

- Focusing
- Imagery
- Competition Planning
- Mental Practice, and
- Refocusing

And second we uses Modified Competitive State Anxiety Inventory-2 (CSAI-2D) of Jones & Swain, 1992 in the form of State anxiety, Self-Confidence at Intensity level and their Directional interpretations on the dependent variables and its sub variables as under:-

1. Cognitive Anxiety Intensity
2. Somatic Anxiety Intensity
3. Self-confidence Intensity
4. Cognitive Anxiety Direction
5. Somatic Anxiety Direction
6. Self-confidence Direction

**2.3 Statistical Method**

As per the objective of the study selected statistical techniques use in this study were descriptive statistics, Pearson’s Product Moment Correlation to measured the relationship between mental skills and anxiety and MANOVA to assessed their sports performance among Indian athletes and establish the Reliability of the OMSET-3 version on Indian athletes.

**3. Result**

Descriptive statistical analysis and Pearson’s Product Moment Correlation was used to measure the results which shows most of the athletes’ used mental skills strategies to cope up with anxiety symptoms during competition. There was significant relationship between competitive anxiety and mental skills.

**3.1 Descriptive Result of Mental Skills and Competitive Anxiety**

As depicted in the table no.-1, the descriptive result of competitive anxiety and mental skills of athletes’ performance. The descriptive values (Mean ± SD) of anxiety on intensity and directional level interpretation on Cognitive State Anxiety, Somatic State Anxiety and Self-Confidence and mental skills were measured. Mean and SD of athletes of mental skills at foundation skills were 73.82 ± 5.28, psychosomatic skills were 77.24 ± 11.42 and cognitive skills were 101.24 ± 13.03 and anxiety at Intensity level cognitive state anxiety were 18.26 ± 5.44, somatic state anxiety were 14.92 ± 3.99, self-confidence were 28.05 ± 3.78, and anxiety at Directional level Mean and SD value of cognitive state anxiety were -.63 ± 11.12, somatic state anxiety were -5.45 ± 9.57, and self-confidence were 14.29 ± 5.48.

**Table 1:** Descriptive Result of Mental Skills and Competitive Anxiety

Variables	Mean	Std. Deviation	N
<b>Foundation Skills</b>	73.8158	5.28054	38
<b>Psychosomatic Skills</b>	77.2368	11.41936	38
<b>Cognitive Skills</b>	101.2368	13.02479	38
<b>Cognitive Anxiety</b>	18.2632	5.43604	38
<b>Cognitive Anxiety</b>	-.6316	11.12198	38
<b>Somatic Anxiety</b>	14.9211	3.98905	38
<b>Somatic Anxiety</b>	-5.4474	9.57106	38
<b>Self Confidence</b>	28.0526	3.77722	38
<b>Self Confidence</b>	14.2895	5.48170	38

**3.2 Relationship between Mental Skills Test and Retest**

Product- moment correlation in table no. 2 shows the significant relationship between Test-Retest of mental skills at 0.01 levels. Foundation skills, psychosomatic skills and Cognitive skills are significantly correlated.

**Table 2:** Pearson’s Product Moment Correlation between Test & Retest of Mental Skills

VARIABLES	r	Sig.
Fondation Skills	.530**	.001
Psychosomatic Skills	.581**	.000
Cognitive Skills	.499**	.001

N = 38

Correlation is significant at the 0.05 level (2-tailed).\*

Correlation is significant at the 0.01 level (2-tailed).\*\*

**3.3 Relationship between Mental Skills and Anxiety Interpretation/Self Confidence**

In table no. 3 the main focus is on the relationship between mental skills (foundation skill, psychosomatic skill and cognitive skill) and competitive anxiety (cognitive & somatic anxiety and self-confidence) at intensity interpretation and directional interpretation. The results show the significant relationship between mental skills and competitive anxiety.

**3.3.1 Relationship between Mental Skills and Anxiety Intensity Interpretation**

Product- moment correlation shows significant relationship between mental skills and intensity interpretation of

competitive anxiety/self-confidence. The relationship between psychosomatic skills with cognitive anxiety, somatic anxiety and self-confidence was found significant at  $p < 0.05$  &  $p < 0.01$ . Similarly, the significant relationship has been found on foundation skills with self-confidence. And in the end the significant relationship of cognitive skills with cognitive anxiety and somatic anxiety and self-confidence has been found.

There were no significant relationships found between mental skills and competitive anxiety on psychosomatic skills with self-confidence, foundation skills with cognitive anxiety, somatic anxiety and self-confidence and cognitive skills with self-confidence.

**3.3.2 Relationship between Mental Skills and Anxiety Directional Interpretation**

Product- moment correlation shows significant relationship between mental skills and directional interpretation of competitive anxiety self-confidence. The significant relationship was found between psychosomatic skills with cognitive anxiety, somatic anxiety and self-confidence, foundation skills with self-confidence and cognitive skills with self-confidence at  $p < 0.05$  &  $p < 0.01$ . There were no significant relationship was found between mental skills and competitive anxiety in foundation skills with cognitive anxiety, somatic anxiety and cognitive skills with cognitive anxiety and somatic anxiety.

**Table 3:** Pearson’s Product Moment Correlation between Mental Skills and Anxiety Interpretation/Self Confidence

Variables		Fondation Skills		Psychosomatic Skills		Cognitive Skills	
		r	Sig. (2-tailed)	r	Sig. (2-tailed)	r	Sig. (2-tailed)
Cognitive Anxiety	INTENSITY	-.012	.941	-.477**	.002	-.349*	.032
Cognitive Anxiety	DIRECTION	.021	.898	-.418**	.009	-.274	.096
Somatic Anxiety	INTENSITY	-.085	.610	-.405*	.012	-.375*	.020
Somatic Anxiety	DIRECTION	.001	.995	-.402*	.012	-.219	.187
Self Confidence	INTENSITY	.152	.361	.311	.057	.230	.164
Self Confidence	DIRECTION	.344*	.035	.614**	.000	.459**	.004

N = 38

Correlation is significant at the 0.05 level (2-tailed).\*

Correlation is significant at the 0.01 level (2-tailed).\*\*

**4. Discussion and Findings**

Through this study, try to find out the significant relationship between the Mental Skill test-retest and mental skills with anxiety interpretation/self-confidence on Indian population. The result shows significant relations which are helpful in developing or facilitating performance and creating a positive approach in sports competition for athletes’. With the help of Pearson’s Correlation we found that OMSAT-3 version skills and Anxiety Interpretation/Self Confidence with Mental Skills of OMSAT-3 are Reliable on Indian Population in relation to performance.

In this study we measured the competitive anxiety with self-confidence where 3 variables are measured on intensity level anxiety and directional interpretation of that anxiety with 3 mental skills (foundation skills, cognitive skills and psychosomatic skills) on Indian population.

According to this study was found positive relationship between 3 skills of mental skills scale we found the moderate relations between variables of mental skills. We also found the positive and negative relationship between 3 skills of mental skill and anxiety/self-confidence where the relations were moderate and high between the variables. After study the various study and material on Mental Skills we found mental

skills training is required for creating positive approach in sports competition to facilitate performance of athletes. According to this study survey we found athletes not getting any mental skills training in their training session and through this absence of training program all variables of Mental Skills (OMSAT-3 version) were not highly correlated in relation of athlete’s performance.

CSAI-2D scale assessed the intensity of cognitive anxiety, somatic anxiety and self-confidence which represents the effect of state anxiety on performance and in other hand directional interpretation represents the effects of these anxiety symptoms which perceived as being facilitative or debilitating to performance.

As per the previous researches the result of mental skill scales is significantly effective on training programs, which helpful to athlete to improve their performance through cognitive strategies. Mental skills training can serve a number of purposes in preparing athletes for competition and improving the quality.

The dealing with these high anxieties an important task open for coaches to maintain their athlete’s performance under stress situation and reducing the problems which have creates problems in their concentration, memory and the priority they

should put on in their performance. Due to high anxiety situations athletes could not perform at their best like they usually could. Therefore, coaches use the mental skills to recover from all problems of athletes which consequently improve the affected competitive performance and they seldom achieve victory (Papanikolaou, Nikolaidis, & Keramidas, 2008.)<sup>[4]</sup>.

### 5. Suggestions

Anxiety experiences develop directly from “autonomic arousal” these are such a problematic for athlete performance which increases the physiological arousal may accompany other emotions, such as excitement or anger.

These problematic physiological arousals in athlete performance can be controlled and cope with anxiety, and achieve their desired goals with the help of mental skills training. Mental Skills Training program plays an important role to facilitate performance of athletes which are requirement for best performance during sports competition.

According to this study it was found that an athlete's without any mental skills training in their training session use to face many physiological and psychological arousal which creates negative expectancies, self-doubt, increases in heart rate and muscular tension. Changes in physiological and psychological arousal of athletes performance can be controlled with the uses of mental skills training (MST) program in their training session as it had a high correlation in terms of performance in

competition.

Mental Skill training is required for high performance and Goal attainment. So, in the absence of Mental skill training many breaks in having to perform like: (a) Due to injury, (b) Nature of the game (time between playing periods such as half time), (c) Judicial breaks (umpires/ referees consulting) and (d) between execution of skills (e.g. in Golf, Trap Shooting etc.) (Kelly Sponholz, 2012)<sup>[1]</sup>.

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