

## Influence of Mental Toughness on Selected Psychological Overtraining Symptoms

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### Abstract:

*The increasingly competition environment of professional sport has resulted in greater training load to enhance performance, but prolonged time unsystematic training lead to overtraining syndrome which define as physical and psychological syndrome. The present study was to find out the relationship of mental toughness with Psychological symptoms of Overtraining Syndrome. For this study the targeted subject was different cricket associations Of Uttar Pradesh are Allahabad cricket association(A.C.A), Kanpur cricket association.(K.C.A) and Lucknow cricket association(L.C.A).The subjects in this study were (N=120, 40 A.C.A, 40 K.C.A and 40 L.C.A) male of age ranged from 19 to 23 years and were shortlisted through purposive sampling. To analyses, Overtraining Syndrome of the subjects following psychological symptoms (Mood disturbance, Athlete Burnout, Coping Ability, stress and depression) was selected. For assessment of mental toughness and selected psychological symptoms of Overtraining Syndrome of cricketers, descriptive statistics was used, relationship was drawn by used of Spearman Rho Correlations and the level of significance was set at 0.05. Findings demonstrated that higher levels of mental toughness were associated with lower levels of*

*mood disturbance, athlete burnout, depression, and perceived stress and higher level of coping ability in Uttar Pradesh cricket association cricketers.*

**Key words:** Overtraining Syndrome, Mood Disturbance, Athlete Burnout, Coping Ability, and Mental Toughness

## **Introduction**

The game of cricket is believed to have been played in the organized form hundreds of years ago. Cricket was introduced to North America by the English colonies in the 17th century probably before it had even reached the north of England (Bowen, 1970). Physically and mentally cricket is known as a tough game and famous for very stiff competitions. The sports competitions are always stressful and players must have the knowledge to deal with pre game nerves. Athletes exposed to high levels of physical training in order to elicit training adaptations and improve performance (Bompa, 1983) overload training techniques are commonly employed to optimize performance at the time of competition. This involves progressively increasing training loads followed by appropriate periods of reduced training or tapering prior to competition. While it was originally theorized that the principle of overload training was based on a positive period of physiological adaptation (or super compensation) during the recovery phase, this has been shown to be less important than the reduction of accumulated fatigue associated with training. The tapering period is more important to reduce the negative physical and psychological factors associated with training. When overload training and tapering are poorly managed, overreaching manifests a performance decrement can result. If this is allowed to continue unchecked for a long period, overtraining syndrome can result. Overtraining syndrome results from a combination of physical and psychological stresses, with

emotional stress and anxiety often as important as physical stress. Inadequate recovery time combined with increased physical and psychological stressors can result in over training. Overtraining syndrome occurs when a cycle of high intensity, high volume training continues over weeks or months without enough time for the athlete to recover (Kraemer& Nindl, 1998). High levels of intense training for prolonged periods can predispose athletes to physical and psychological problems, illnesses, and injuries (Kuipers&Keizer, 1988). Symptoms of overtraining include mood changes, depression, an increased risk for developing infections, and increased susceptibility to injuries (Budgett, 1990; Kellmann, 2010). Strong connections have been documented between overtraining and various psychological variables, including coping ability and mood states. As physiological measures of monitoring overtraining require further investigation and thus far have demonstrated unclear relationships, it is more common to use psychological markers to track an athlete's responses to training. Strong connections have been documented between overtraining and mood state. Morgan, Brown, and colleagues (1987) found that there was a dose-response relationship between mood state disturbances and increased training load in 400collegiate-level competitive swimmers over the course of a season. As the training load increased, mood state disturbances increased as well, and mood disturbances returned to baseline levels when training was reduced. Athletes subjected to high training loads may also experience burnout. Athlete burnout is a psychological syndrome characterized by emotional and physical exhaustion, reduced sense of accomplishment, and sport devaluation, and can be associated with the intense demands of training (Raedeke, 1997). Athletes suffering from burnout may have feelings of entrapment, lack of interest in training, and may withdraw from sport (Smith, 1986; Goodger, Gorely, Lavallee, & Harwood, 2007). Symptoms of athlete burnout include lack of enthusiasm and depression (Smith, 1986; Raedeke, 1997).

The effect of environmental stressors is mediated by cognitive appraisal and perception of those stressors, and the coping ability that the individual possesses. Fletcher (2005) suggested that the mental toughness level of an athlete would influence how that athlete responds behaviorally, emotionally, and cognitively to stressors. Therefore, mentally tough individuals would be less affected by stressors in their environment. Therefore, observing the felt requirement, we consider it necessary attempt to explore a relationship between mental toughness with Psychological markers of Overtraining Syndrome of Uttar Pradesh cricket association male cricketers.

### **Objective of the Study**

The objective of the study was planned with the aim to assess relationship of mental toughness with Psychological symptoms of Overtraining Syndrome in Cricket players of different Cricket associations of Uttar Pradesh.

### **Materials and Methods**

Participants (N=120, 40 A.C.A, 40 K.C.A and 40 L.C.A) cricket male players recruited from there respected district cricket association, who consistently registered last five years, aged ranged between 19 to 23 years and 100% provided permission to use data from class project for research purpose. Spearman Rho Correlations statistical technique was applied to assess relationship of mental toughness with Overtraining Syndrome symptoms of the subjects following psychological variables (mood disturbance, athlete burnout, coping ability, stress and depression), at 0.05 level of significance.

### **Selection of Subjects**

At the first stage, large number of responses (225) was collected by questionnaire method of cricketers from Uttar Pradesh

concerned with mental toughness and selected psychological overtraining symptoms and then those responses are tabulated as for this study, which was showing the effect of overtraining symptoms as manual of questionnaire.

## **Description and Administration of Questionnaire**

The subject was assessed on selected criterion variables namely, coping ability brief COPE (Carver, Scheier, & Weintraub, 1989) questionnaire. It has 28 items organized into 14 subscales with two items each – Self-Distractive, Active Coping. The measure use a four-point Likert scale, with response options ranging from 1 = I haven't been doing this at all to 4 = I've been doing this a lot. The Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001).It has 15 items that has three subscales with five items each: Reduced Sense of Accomplishment, Devaluation, and Emotional/Physical Exhaustion. The measure use a five-point, with response options ranging from 1 = almost never to 5 = most of the time. Profile of Mood States-30 (POMS; McNair et al.,1971) questionnaire was use to measure mood disturbance had 30 mood-related adjectives and the items were scored on a five-point scale, with response options of 1= not at all to 5 =extremely. Mental Toughness questionnaire (MTQ; Dr. Alan Goldberg, 2004). This test consists of 30 questions includes both positive and negative statements. Each statement consists of two responses: true or false. Perceived Stress Scale (PSS; Coehn, Kamarch, & Mermelstein, 1983) has 10items. The PSS is scored on a five-point scale, with response options ranging from 1 =never to 5 = very often. The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, &Erbaugh, 1961) contained 21 items; Items are scored on a 0-3 scale .The purpose of the study was explained to them. The questionnaire was administered individually by the research scholars to all

the subjects and subject were exhorted to give their frank and true opinion.

## **Data Analysis**

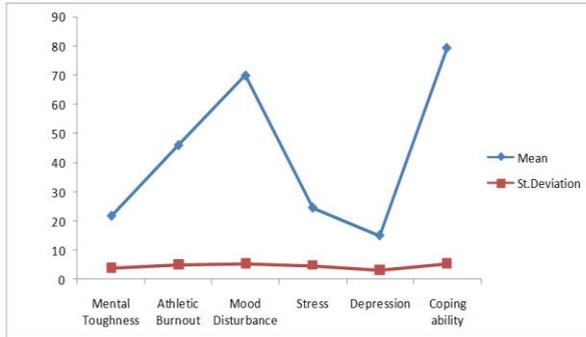
For data analysis responses were expressed as mean and standard deviation and relationship test were performed and  $p < 0.05$  was considered statistically significant. Data analysis was performed using SPSS 17.0 software under windows.

## **Results**

To assess correlation of mental toughness with psychological markers of overtraining syndrome and the means and standard deviations of the total subject along with groups has been presented in tables.

**TABLE-1 Descriptive Statistics for the total scores of mental toughness and selected psychological overtraining symptoms**

	<b>Mean</b>	<b>S. D</b>	<b>N</b>	<b>Skew</b>	<b>kurt</b>
<b>Mental toughness</b>	21.750	3.83756	120	.172	-1.234
<b>Athletic Burnout</b>	46.075	5.28540	120	-.488	-.256
<b>Mood disturbance</b>	70.025	5.49478	120	-.246	-.302
<b>Stress</b>	24.575	4.90868	120	-.297	-.827
<b>Depression</b>	15.025	3.17676	120	-.997	1.207
<b>Coping ability</b>	79.541	5.37954	120	.480	-.966



**Graphical representation for the total scores of mental toughness and selected psychological overtraining symptoms**

**TABLE-2 Descriptive Statistics for the total scores of mental toughness and selected psychological overtraining symptoms among different cricket association of Uttar Pradesh state**

Psychological markers	Descriptive statistics	Allahabad cricket association	Kanpur cricket association	Lucknow cricket association
<b>Mental toughness</b>	Mean	21.90	21.80	21.55
	Std.deviation	3.79	3.85	3.95
<b>Athlete burnout</b>	Mean	45.10	46.52	46.60
	Std.deviation	6.09	4.99	4.66
<b>Mood disturbance</b>	Mean	67.57	70.45	72.05
	Std.deviation	4.44	6.02	5.04
<b>Perceived stress</b>	Mean	24.87	26.40	22.45
	Std.deviation	4.05	4.13	5.64
<b>Depression</b>	Mean	12.87	15.77	16.42
	Std.deviation	3.79	2.24	2.01
<b>Coping ability</b>	Mean	79.70	79.55	79.37
	Std.deviation	5.50	5.45	5.30

Table- 1 revealed mean ( $\pm$ s.d) of mental toughness and selected psychological symptoms, i.e. Athlete burnout, Mood disturbance, perceived stress, Depression and Coping ability of total cricket players, further table-2 provide mean and standard deviation of different cricket association of Uttar Pradesh state.

**TABLE-3 Spearman Rho Correlations of mental toughness with the total scores of selected psychological overtraining symptoms**

VARIABLES	1	2	3	4	5	6
<b>MENTAL TOUGHNESS</b>	.....					
<b>ATHLETIC BURNOUT</b>	-.273**	.....				
<b>MOOD DISTURBANCE</b>	-.346**	.248**	.....			
<b>PERCEIVED STRESS</b>	-.398**	.090	.206*	.....		
<b>DEPRESSION</b>	-.219*	.149**	.264**	.032	.....	
<b>COPING ABILITY</b>	.203*	-.233*	-.230**	.068	-.046	.....

Note: \*= $p \leq .05$  \*\*= $p \leq .01$

## Discussion

Result of present study reveals the relationship between mental toughness and overtraining symptoms such as stress, depression, athletic burnout, mood disturbance etc. Mental toughness is the ability to perform at the upper range of one's ability regardless of the circumstances, and is one of the most important characteristics that an athlete can possess (Loehr, 1986). Athlete with higher level of mental toughness exhibited reduced the levels of athlete burnout, mood disturbance, depression and stress. Emotional aspect of mental toughness is inversely associated with mood disturbance, burnout and stress (Welch, 2010).

Result further suggests that mental toughness is positively associated with coping ability. Coping ability is also inversely associated with stress, depression and athletic burnout. Mental toughness is ability of athlete to handle emotional, mental and physically stress effectively. Increased level of mental toughness may attribute positive influence cognitive arousal and confidence to tackle stressful situation

and counter psychological stress. Coping ability refers to manage specific external or internal demands, conflicts appraisal as distressing, or exceeding one's resources.

Claugh et.al (2002) presented a theoretical model of mental toughness on the basis of interviews with athletes, coaches and psychologist. This model is related to hardiness, which includes perception of situation and ways of reaction on stressful situations (Kobasa 1979). Higher level of hardiness is key factor for coping stress effectively and protect from negative effects of stress (Maddi 2004).

Mental toughness is an essential characteristic of every athlete as it helps to overcome the damaging effects of stress. Though health psychologist have found that there is a similarity between the concept of hardiness and mental toughness as both helps to fight altogether a distinct construct. Mental toughness includes inter personal confidence which distinguishes mental toughness from Hardiness.

It is proved by many researchers (like Jones et al. 2007), (Bull et al. 2005) that mentally tough athletes are able to cope with the stressed situations more effectively and actively. Through coping strategies that mentally tough athletes may use, are not clearly investigated. So it will be wrong to consider coping behavior as an integral part of mental toughness with further studies and research.

Those who are mentally tough can handle pressure situations with a desire to achieve rather than a fear of getting failed. Mental toughness also helps the athletes to physically arousal within control. It helps to handle a competitive and pressure situation with self control and concentration. Mentally tough athletes are capable to control emotional situation easily and can remain calm in any pressure situation. They fight against feelings of stress, helplessness, hopelessness, rigidity etc. whereas the less mentally tough athletes become victims of their own self-defeating thoughts and ideas which lead them to

lose concentration and finally become prey to agitation and mental disorder.

## **Conclusion**

The result of the study indicated that mental toughness of cricketer is significant related to their coping ability. The higher levels of mental toughness are significantly associated with lower levels of mood disturbance, athlete burnout, perceived stress and depression. However, coping ability is significant inversely associated with of mood disturbance and athlete burnout whereas stress and depression insignificantly associated with coping ability.

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