

## Mental Toughness of University Level Male Volleyball Players of Various Universities in Kerala

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### Abstract

The purpose of the study was to analyse the level of mental toughness among inter colligate male volleyball player from four universities of Kerala state. Age of selected students ranged from 18 to 25. Sports Mental Toughness questionnaire (SMTQ) was used for the study (Sheard, M., Golby, J., & Van Wersch, A., 2009). The two way ANOVAs and LSD post hoc analysis used to find significant difference between groups and independent variables (confidence, constancy, control and total). The results of the study clearly show that the different universities are different in developing the sports mental toughness of players.

**KEYWORDS:** Mental toughness, volleyball players, gender, Universities and Kerala.

### INTRODUCTION

A key question for sport and exercise psychologists is whether champions have simply inherited the dominant psychological traits necessary for success or whether mental toughness can be acquired through training and experience. Recent research has attempted to explore the concept of mental toughness in sport more thoroughly, and it appears that, while some people are naturally more tough-minded than others, people can be 'toughened-up' with the correct approach to training. The definition that resulted from the study of Gucciardi et al., 2008; Tristan et al., 2010, is as follows: "Mental toughness is having the natural or developed psychological edge, that enables you to generally cope better than your opponents with the many demands (competition, training, and lifestyle) that sport places on a performer, and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure".

Mental toughness in Australian Football is a collection of values, attitudes, behaviors, and emotions that enable you to persevere and overcome any obstacle, adversity, or pressure experienced, but also to maintain concentration and motivation when things are going well to consistently achieve your goals (Gucciardi, Gordon, & Dimmock, 2008). Mental toughness is "Having the natural or developed psychological edge that enables you to: generally, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer; specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure." (Jones, Hanton, & Connaughton, 2002).

In volleyball, as in any other sport, there are several fundamental components that influence the players' behaviour during a competition. A player's ability to play a good game depends on herself: her technical and tactical abilities, physical qualities, psychological skills, and theoretical knowledge. (Crust, 2008).

"Mental toughness" is frequently used colloquially to refer to any set of positive attributes that helps a person to cope with difficult situations. Coaches and sport commentators freely use the term mental toughness to describe the mental state of athletes who persevere through difficult sport circumstances to succeed. For example, it is often simply applied as a default explanation for any victory, which is highly problematic as an attribution. Criticisms about the use of this imprecise approach abound (for example, Moran (2012)). However, within the past fifteen years, scientific research has attempted a formal definition of mental toughness as a psychological construct with clear measurement criteria, allowing robust analyses and comparisons to be made. In particular, three research teams have produced both a definition and a construct definition for mental toughness: term 'mental toughness' is possibly one of the most used and yet least understood in the domain of sport. Its frequent use by athletes, coaches, the media and sport psychologists alike clearly indicates the importance attached to the concept, possibly because of its potential relationship with successful performance (Crust, 2007).

Despite its recognition, uncertainty still surrounds the exact definition of mental toughness and its conceptualisation. Despite the coaching and scientific communities widely acknowledging the importance of mental toughness for achieving performance excellence, overcoming setbacks and bouncing back from adversity, only since the turn of the millennium have researchers allocated empirical attention to this attractive and yet often elusive phenomenon. The first academic reference to the concept of mental toughness was by Cattell, Blewett and Beloff (1955) who suggested 'tough-mindedness' was a culturally or environmentally determined personality trait seen as fundamental for success. Purported to be one of sixteen primary source traits that described personality, Cattell (1957) viewed tough-minded individuals as self-reliant, realistic and responsible, and contrasted this with emotional sensitivity. This reiterates the need for players to have a resilient character, an unruffled self-belief, a mind-set that allows them to be rational, meticulous and focused to deal with the dynamic demands of volleyball at all times.

The purpose of the study was to evaluate mental toughness of female intercollegiate volleyball players belonging four leading Universities in Kerala. The result of the study can contribute towards strengthening an awareness of the importance psychological constructs and their application at all levels of the game. It was hypothesized that there would be differences between universities on the basis of performance in mental toughness attributes of players.

### Materials And Methods

The participants in the study were 154 male volleyball players of Kerala University, MG University, Calicut University and Kannur University, who secured first, second, third and fourth position in their respective inter collegiate competitions. The details of the subjects of the study were presented on Table 1:

**Table 1: Details of female participants in the study**

Group	University	N
1	Kerala University	34
2	M G University	45
3	Calicut University	40
4	Kannur University	35
	Total	154

### Instrumentation

Sheard, M., Golby, J., & Van Wersch, A. (2009) developed a multidimensional measure of mental toughness (MT) called the Sports Mental

Toughness Questionnaire (SMTQ). This study examines the construct validity of an original self-report instrument for the assessment of mental toughness: the Sports Mental Toughness Questionnaire (SMTQ). Two independent studies supported a three-factor (Confidence, Constancy, and Control) 14 -item model for the SMTQ. The present study used the SMTQ to assess the mental toughness of the university level female volleyball players. The SMTQ assess global mental toughness encompassing three factors: (1) confidence, (2) constancy and (3) control. According to Sheard (2010), the confidence subscale measures athletes’ belief in their own abilities to achieve goals and be better than their opponents. Constancy reflects determination, personal responsibility, an unyielding attitude, and ability to concentrate. Finally, control in the SMTQ is concerned with the perception that one is personally influential and can bring about desired outcomes with particular reference to controlling emotions.

The participants had to respond to items on a four-point Likert-type scale ranging from “not at all true” [1] to “very true” [4]. Sample items included “I interpret threats as positive opportunities” (confidence); “I give up in difficult situations” (constancy); and “I am overcome by self-doubt” (control). Confirmatory factor analysis (CFA) has provided support for the three subscales and the global measure of mental toughness. Additionally, Sheard *et al.* (2009) revealed support for the internal reliability of the SMTQ subscales with Cronbach  $\alpha$ 's of greater than 0.72. At the time of calculation, maximum score of confidence =24, constancy=16, control=16 and total is the sum total of the three variables.

**Data Collection**

The measurement was conducted over a 1 month of period in 2016 November. The samples were taken from the intercollegiate male volleyball players of Kerala state who participated in university level competition during 2016-2017 academic years.

Participants are as lead to respond to sports mental toughness questionnaire (SMTQ)14 items questions and it was a score on calculating total score of variables (confidence, constancy, control, total). Participants were given assurances of confidentiality and each provided written consent prior to completing the questionnaires. Most questionnaires were completed following training sessions

**Data Analysis**

The Volleyball players belong to different colleges of four universities in the state of Kerala (Kerala University, M.G University, Calicut University and Kannur University). The univariate analysis of variance (ANOVA) was computed to assess difference on mean scores on mental toughness. The data were analyzed by using SPSS version 20.0 (SPSS inc. Chicago,IL) Schaffe post hoc analysis was performed when satisfied significance ( $p<.05$ ) was obtained to identify pair wise differences.

**Results and Discussion**

**Table 2: SMT-Confidence, Constancy, Control and Total of intercollegiate male volleyball players**

Variable	Kerala (n=34)	MG (n=45)	Calicut (n=40)	Kannur (n=35)
Confidence	19.56	17.58	18.13	17.06
Constancy	11.38	11.49	11.83	10.86
Control	10.12	12.53	12.3	11.46
Total	13.69	13.87	14.10	13.24

Sports mental toughness dependent variable confidence of Kerala University players mean was 19.56 with standard deviation of 3.078, MG University players confidence mean=17.58 with standard deviation of 3.381., Calicut University players

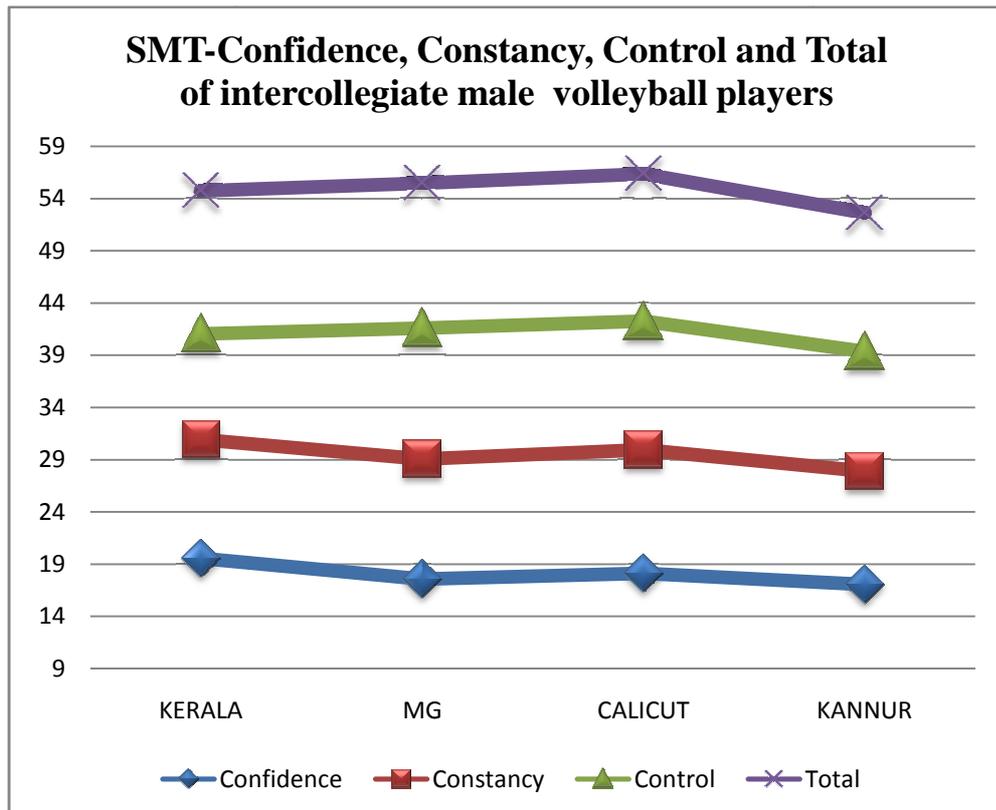
confidence mean=18.13 with standard deviation of 2.30 and Kannur University players confidence mean=17.06 with standard deviation of 3.038.

Sports mental toughness dependent variable constancy of Kerala University players mean was 11.38 with standard deviation of 1.724, Mg University players confidence mean=11.49 with standard deviation of 1.792, Calicut University players confidence mean=11.83 with standard deviation of 2.11 and Kannur University players confidence mean=10.86 with standard deviation of 2.12.

Sports mental toughness dependent variable control of Kerala University players mean was 10.12 with standard deviation of 2.63, Mg University players confidence mean=12.53 with standard deviation of 2.39, Calicut University players confidence mean=12.30 with standard deviation of 2.47 and Kannur University players confidence mean=11.46 with standard deviation of 2.58.

Sports mental toughness dependent variable Total of Kerala University players mean is 41.06 with standard deviation of 4.57, MG University players confidence mean=41.60 with standard deviation of 4.13, Calicut University players confidence mean=42.30 with standard deviation of 4.82 and Kannur University players confidence mean=39.71 with standard deviation of 4.52.

The results of the study clearly indicate that, Calicut University having higher mean score on all the selected dependent variables followed by MG University and Kerala University. In total lowest score was attained by Kannur University but their mean score on dependent variable control was higher than the Kerala University male volleyball players. Graphical representations of the mean scores are given in Fig 1.



**Fig. 1. Mean scores of mental toughness dependent variables of different Universities**

**Table 3: ANOVA between subject effects**

Source	Type III sum of squares	df	Mean	F	Sig	Partial eta squared
Confidence	92.519	3	30.840	4.014	.009	.080
Constancy	9.805	3	3.268	.897	.445	.019
Control	120.712	3	40.237	6.918	.000	.130
Total	93.298	3	31.099	1.593	.194	.033

The results of ANOVA reveals that, there were a significant differences between Universities on sport mental toughness dependent variable confidence [F (3, 154) = 4.014,  $p = 0.009$ ] and control [F (3, 154) = 6.918,  $p = 0.000$ ] at the  $p < .05$  level. 13% variability in mental toughness variables found due dependent variable control. No significant differences were found between other dependent variables.

**Table 4. Post-hoc test on significant Dependent Variables**

Dependent Variable		Mean Difference (I-J)	Std. Error	Sig.	
Confidence	Kerala (M=19.56)	M.G	1.98*	.630	.002
		Calicut	1.43*	.647	.028
		Kannur	2.50*	.667	.000
	M.G (M=17.58)	Kerala	-1.98*	.630	.002
		Calicut	-.55	.602	.365
		Kannur	.52	.625	.406
	Calicut (M=18.13)	Kerala	-1.43*	.647	.028
		M.G	.55	.602	.365
		Kannur	1.07	.642	.098
	Kannur (M=17.06)	Kerala	-2.50*	.667	.000
		M.G	-.52	.625	.406
		Calicut	-1.07	.642	.098
Control	Kerala (M=10.12)	M.G	-2.42*	.548	.000
		Calicut	-2.18*	.563	.000
		Kannur	-1.34*	.581	.023
	M.G (M=12.53)	Kerala	2.42*	.548	.000
		Calicut	.23	.524	.657
		Kannur	1.08*	.544	.050
	Calicut (M=12.3)	Kerala	2.18*	.563	.000
		M.G	-.23	.524	.657
		Kannur	.84	.558	.133
	Kannur (M=11.46)	Kerala	1.34*	.581	.023
		M.G	-1.08*	.544	.050
		Calicut	-.84	.558	.133

\*. The mean difference is significant at the .05 level.

The above table shows that, there is significant difference between Kerala University and MG University (MD = 1.98), Kerala University and Calicut University (MD = 1.43) and Kerala University and Kannur University (MD=2.50) on mental toughness variable confidence. No significant difference found between MG University and Calicut University, MG University and Kannur University and Calicut University and Kannur University on mental toughness variable confidence.

In mental toughness variable control there is significant difference between MG University and Kerala University (MD=2.42), MG University and Kannur

University (MD=1.08), Calicut University and Kerala University (MD=2.18) and Kannur University and Kerala University (MD=1.34). No significant difference found between Kerala University and MG University, Kerala University and Calicut University, Kerala University and Kannur University, Calicut University and MG University, Calicut University and Kannur University, Kannur University and MG University and Kannur University and Calicut University.

## DISCUSSION

The athletes in this current study tended to believe that mental toughness was a learned attribute rather than natural, whereas the world and Olympic champions in Jones et al. (2007) study stated it could be either natural or developed. The present study was hypothesized that there would be differences between universities on the basis of performance in mental toughness attributes of players, it was accepted.

In the year 2016-17, South Zone Volleyball men competitions were held at MG University and MG University got runner up, University of Calicut qualified for inter zone. The other two universities from the Kerala state not qualified for the inter-zone tournaments. Subsequent inter-zone tournaments were held at MG University and Kurushetra University won the championship. and MG University won the third position.

No significant difference found between Calicut University and MG University in dependent variable confidence and scores were high among the groups. The MT attribute, control is concerned with the perception that one is personally influential and can bring about desired outcomes with particular reference to controlling emotions, which high among Calicut University and MG University male volleyball players. This ability may be helped them to achieve the victory by controlling the emotions. These findings in consensus to those of Jones *et al.*'s (2002) and Gucciardi *et al.*'s (2008) proposition that mental toughness influences performance, nor do they support Starkes and Ericsson's (2003) contention that psychological factors distinguish between successful and less successful athletes.

Moreover, the concepts, attributes and measuring of mental toughness are usually based on the perceptions and experiences of elite and super-elite athletes (e.g., Clough *et al.*, 2002; Jones *et al.*, 2002; Thelwell *et al.*, 2005). In line with the above observation, Jones *et al.* (2007) argue that the facets of mental toughness are better applicable among athletes who have achieved success. The findings of this study are only partially in line with Crust's (2007) and Gucciardi *et al.*'s (2009d) assertion that mental toughness differentiates athletes from different competitive levels. Thus at the same competitive level of play, the psychological competitive edge might not always be visible. Crust and Azadi (2010) are of the opinion that the differentiating nature of the mental toughness construct often espoused in the literature (e.g., Clough *et al.*, 2002; Jones *et al.*, 2002; Thelwell *et al.*, 2005) has not been rigorously tested by research. Therefore, one cannot confidently claim that mental toughness differentiates between successful and less successful volleyball players.

Future research should establish whether mental toughness and the associated positive effects on performance are cultural-specific. The Western cultural dominance of mental toughness knowledge and research (Gucciardi & Gordon, 2011) necessitates the need for cross-cultural studies.

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