

# Mental Toughness Attributes of Junior Level Medalist Badminton Players

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## ABSTRACT

*The study aims to compare the mental toughness attributes between medalist and non-medalist badminton players and between male and female players. Participants were 15 male and 15 female badminton players aged between 13-19 years ( $M= 15.71$ ,  $SD=2.82$ ). Mental toughness questionnaire of Tiwari and Sharma was administered and the data were analyzed by using descriptive statistics and t-test. Medalist players have exhibited higher mean values on self-confidence, attention control, motivation and goal setting attributes. Overall mental toughness of medalists was higher  $180.80\pm 17.15$  than non-medalists  $170.25\pm 20.10$ . Comparison analysis showed significant difference between medalists and non-medalists on mental toughness attributes: Self-confidence (SCO:  $p=0.001<0.05$ ), medalists scored ( $M\pm SD=31.33\pm 2.10$ ) higher than non-medalists; motivation (MOT:  $p=0.006<0.05$ ), medalist scored higher ( $M\pm SD=33.50\pm 4.07$ ); goal setting (GSE:  $p=0.044<0.05$ ), medalists scored significantly higher ( $M\pm SD=33.55\pm 4.11$ ) than non-medalists. Other attributes did not show any significant difference between medalist and non-medalist players. When compared with gender, no significant difference was observed on mental toughness attributes except attention control (ATNCON:  $p=0.044<0.05$ ), female players scored ( $M\pm SD=38.97\pm 3.08$ ) higher than male players. The findings confirm that mental toughness is a desired attribute which differentiates a medalist and non-medalist player. Connaughton et al., (2007) stated that elite competitive athletes possess better mental toughness. Medalist players displayed better self-confidence than the non-medalists as supported by Kuan and Roy (2007), Loehr (1986). Motivation helps players to achieve their best and enhance mental toughness (Connaughton et al., 2008; Mohammad et al., 2009). Goal setting determines successful performance Weinberg and Weigand (1993), Weinberg (2003). It was concluded that medalist badminton players showed better mental toughness attributes than the non-medalists.*

**Key words:** mental toughness, self-confidence, motivation, goal setting, medalist

## Introduction

Mental toughness is a psychological construct that is associated to successful sports performance (Gucciardi, Gordon, & Dimmock, 2009; Crust, 2008; Jones, Hanton, & Connaughton, 2007; Bull, Shambrook, James, & Brooks, 2005; Gould, Diefenbach, & Moffett, 2002). Clough et al. (2002) suggested that mental toughness is a trait that allows individuals to remain relatively unaffected by competition or adversity. Mental toughness can be considered as a mental skill factor and some research findings have identified, mental skills as a psychological construct that distinguishes between more and less successful performance across a number of sports; for example, golf (Thomas & Over, 1994), and equestrian, (Meyers et al., 1998). Mental toughness and its importance in competitive sports have been documented in literature (Goldberg, 1998; Hodge, 1994; Tunney, 1987; Williams, 1988). Loehr (1982; 1986) suggested that fifty percent of success in competitions could be attributed to mental toughness in athletes. On similar lines, Gould et al. (1987) indicated that coaches felt the importance of being mentally tough in achieving success in sports. Norris (1999) also emphasized the importance of mental toughness in the making of a champion athlete. Gould et al. (2002) studied the psychological characteristics of Olympic champions, and identified mental toughness as a significant contributor to sports

performance enhancement. So coaches acknowledge that mental toughness is an essential factor that determines the winning and losing.

The term mental toughness is intuitively appealing and used equally generously by players, coaches and the sports media, yet usually without adequate definition (Cashmore, 2002; Clough, Earle, & Sewell, 2002). Mental toughness is a quality of the players to cope up better than their opponents and unshakable pre service conviction towards the same goal despite pressure and adversity. Jones et al. (2002) defined that “cope better than your opponents with the many demands (competition, training, and lifestyle) that sports places on a performer. Specifically be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure.” Mental toughness is a psychological construct that is associated to successful sports performance (Crust 2008).

Whilst some recent research supports Loehr's (1986) propositions on mental toughness, these have not substantially added to the debate. Specifically, Jones, Hanton, and Connaughton (2002) have suggested that 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 and, specifically, be more consistent and better than your opponents in remaining determined, focused,

confident, and in control under pressure.” While Clough et al. (2002), writing of mentally tough performers, stated that “with a high sense of self-belief and an unshakeable faith that they control their own destiny, these individuals can remain relatively unaffected by competition or adversity.”

Mentally tough athletes use skills, techniques and tactical movements without fear and anxiety during adverse situations that normally increase their performance. The objective of this study was to assess and compare the mental toughness attributes between medalists and non-medalist badminton players and between male and female players.

**Methods**

Thirty badminton players (male 15; female 15) aged between 13-19 years (M=15.71, SD=2.42) were selected randomly who participated in the Under 15 years, 17 years, and 19 years National School Games held at Chandigarh (India). Further the players were divided into medalists (male 5; female 7) and non-medalists. The questionnaire was clearly explained to the participants and they were asked to complete all the items. Participants were informed about the purpose of the study prior to the collection of data.

*Measures*

Mental toughness questionnaire of Tiwari and Sharma (2007) was administered. The questionnaire consists of 48 statements. These 48 statements are further divided into 6 subscales namely; Self Confidence, Attention Control, Motivation, Goal Setting, Visual and Imagery and Attitude Control; which were designed to measure factors that reflect mental toughness of sports persons. Self Confidence subscale contained 8 statements; Attention Control (10 statements); Motivation (9 statements); Goal Setting (8 statements); Visual and Imagery (6 statements); and Attitude Control (6 statements).

*Data Analysis*

Data screening was undertaken to check the missing values and ensure that the values were within the expected range. Descriptive statistics were computed on six mental toughness attributes of male and female badminton players. T- test was applied to compare the means between the groups. The SPSS version 16.0 was used as a tool for analyzing the data. The criterion for statistical difference was set at 0.05 level of confidence.

**Results**

**Table 1.** Descriptive statistics of mental toughness attributes of badminton players

Mental toughness Attributes		Medalist (N=12)	Non-medalist (N=18)	Male (N=15)	Female (N=15)
Self Confidence	Mean	31.33	27.54	29.93	28.66
	SD	2.10	2.53	2.90	2.76
Attention Control	Mean	39.00	36.44	36.00	38.97
	SD	2.04	3.53	4.22	3.08
Motivation	Mean	33.50	28.61	31.66	29.46
	SD	4.07	4.58	4.98	5.12
Goal Setting	Mean	33.55	30.11	31.13	31.27
	SD	4.11	3.47	4.73	3.95
Visual Imagery	Mean	21.25	22.94	21.40	22.13
	SD	2.17	3.42	3.20	3.27
Attitude Control	Mean	22.17	22.22	22.13	22.26
	SD	2.65	2.57	2.79	2.18
Overall Mental Toughness	Mean	180.80	170.25	172.25	172.72
	SD	17.15	20.10	22.82	20.39

Table 1 revealed the mean and standard deviation of all the six mental toughness attributes of badminton players. Medalist badminton players have exhibited higher mean values on self-confidence, attention control, motivation and goal setting attributes. Overall mental toughness of the medalist players were

significantly higher 180.80±17.15 than non-medalist players 170.25±20.10. It may be noticed that not much difference was seen in the mean scores of mental toughness attributes between male and female players.

**Table 2.** Comparison of mental toughness attributes between groups

Groups	Medalist and Non-medalist		Male and Female	
	t-value	p-value	t-value	p-value
Mental toughness				
Self Confidence	3.981	0.001*	1.215	0.235
Attention Control	1.836	0.079	2.18	0.049*
Motivation	2.978	0.006*	1.189	0.244
Goal Setting	2.340	0.044*	0.712	0.483
Visual Imagery	1.553	0.132	1.467	0.154
Attitude Control	0.570	0.955	0.140	0.890

Legend: \*Statistically Significant at the 0.05 levels

In Table 2 comparison analysis showed significant difference between medalists and non-medalists on mental toughness attributes: Self-confidence (SCO: p=0.001<0.05), medalists

scored (M±SD=31.33±2.10) higher than non-medalists (M±SD =27.54±2.53); motivation (MOT: p=0.006<0.05), medalists scored higher (M±SD=33.50±4.07) than non-medalists (M±SD

=28.61±4.58); goal setting (GSE:  $p=0.044<0.05$ ), medalists scored significantly higher ( $M\pm SD=33.55\pm 4.11$ ) than non-medalists. Other attributes did not show any significant difference between medalist and non-medalist players. When compared with gender, no significant difference was observed on mental toughness attributes except for attention control (ATNCON:  $p=0.044<0.05$ ), female players scored ( $M\pm SD=38.97\pm 3.08$ ) higher than male players ( $M\pm SD=36.00\pm 4.22$ )

## Discussion

The objective of this study was to assess and compare the mental toughness attributes between medalists and non-medalist badminton players and between male and female players. The findings support that mental toughness is a desired attribute which differentiates a medalist from a non-medalist player. Self-confidence attributes the belief that one can perform well and be successful (Loehr, 1986). Kuan and Roy (2007) also found that medalists displayed a better self-confidence than the non-medalists. Connaughton et al. (2008) and Mohammad et al. (2009) stated that motivation level helped the players to achieve their best and also affected their mental toughness. Olympic champions may be characterized by a number of attributes including confidence, motivation,

perseverance, focus, and commitment (Durand-Bush, & Salmela, 2002; Gould et al., 2002). Connaughton et al. (2007) and Middleton et al. (2004) had stated that elite competitive athletes possessed better mental toughness. Goal setting determines successful performance (Weinberg & Weigand, 1993; Weinberg, 2003).

Mental toughness appears to be multidimensional and most often associated with unshakeable self-belief, the ability to rebound after failures, persistence or refusal to quit, coping effectively with adversity and pressure, and retaining concentration in the face of many potential distractions. It was concluded that medalist badminton players showed higher mental toughness attributes, including self-confidence, strong motivation, and sound goal setting than the non-medalist players. Gender difference was reported on attention control attribute which explained that male badminton players got distracted easily than the female players.

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