

A QUALITATIVE STUDY OF MENTAL PERSEVERANCE AND MENTAL CONCENTRATION AMONG ELITE AND SUB-ELITE WRESTLERS

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Abstract

Sports itself is a stressor and it demands a high level of resolutions, unflagging eagerness and obstinate persistence from its participants. It is believed that athletes having strong mental hardiness, concentration and optimum skill level do have a dominant hand upon the psychological weaker opponents. In sports, right from the motor acquisition stage to the highest competitive performance level, concentration plays an exceptionally vital role. It is a psycho-physiological process, an intense function of mind which is carried out through cognitive abilities and supplemented by emotional and conational factors. This research is an attempt to examine the dimensions of mental toughness and concentration abilities among wrestlers performing at national and international levels. It also attempts to find the interrelationship between these two parameters. The subjects (N=80) were wrestlers performing at two different levels i.e. national (N=40) and international (N=40). The subjects were asked to complete the Mental Toughness Questionnaire and to work on the Concentration Grid Exercise against time. The data was statistically analyzed. The results indicate that the international level wrestlers possessed significantly higher level of mental toughness as compared to the national level wrestlers. Female wrestlers have been found to possess significantly higher level of concentration abilities. No significant correlation was, however, observed between these two parameters.

Keywords: Mental perseverance, concentration, mental toughness

Introduction

In almost every endeavor that humankind embarks on there exists the drive to be at the top, and in sport, things are no different as the essence of a sporting challenge lies in the search for a winner. In the realm of sports research, mental toughness is perhaps one of the most popular research topics and interest in the topic continues to grow. “Sport is no longer a pastime, run and organized by amateurs” (Golby & Sheard, 2004). Performance standards have increased drastically within elite sport (Bull et al., 2006) and the demands of the elite sporting environment places the athlete into highly stressful situations both physically and psychologically (Hanton et al., 2003). For this reason, psychological attributes as well as mental skills such as self confidence and the ability to cope, the two characters intrinsically imbedded in the mental toughness construct, are becoming commonly accepted as major contributors to overcoming adversity and achieving performance success. Top sportspeople today realize that winning goes far beyond just technique and further includes a new dimension known as the ‘psychology of winning’ which incorporates a magnitude of different mental ingredients such as context specific mental skills found in tailor made mental toughness programs. Mental toughness, in fact, is one of the most important assets an athlete can have (Thelwell et al., 2005) and it is critical for achieving success in competitive sports (Gould et al., 2002). Research on mental toughness indicated that 82% of wrestling coaches identified mental toughness as the most important prerequisite to competitive success (Gould et al., 1987).

Researchers have conceptualized mental toughness in a variety of ways and, in general, the definitions lack consistency. According to Jones et al. (2002) mental toughness can be defined as a psychological quality that helps in coping with sport pressures and allows athletes to be consistently resolute in demonstrating psychological skills such as focus, motivation, confidence, and control. While Middleton et al.(2005) view mental toughness as a strong determination in the face of adversity, Clough et al.(2002) consider challenge, commitment, control, and confidence are central to mental toughness. Faced with the question whether a common definition of mental toughness can be carved out, Bull et al. (2006) are of the view that the characteristics of mental toughness in a global sense might be distinct from how it is understood in a particular sport. Thus, it is being thought that the constituents of mental toughness differ in particular sports. Bull et al. (2006) and Thelwell et al. (2005) in separate research on mental toughness among cricketers and soccer players have observed that the sport-specific definitions were in line with the global definition of mental toughness created by Jones and colleagues (2002). Gucciardi et al.(2008) while defining mental toughness in the context of Australian football

proposed that mental toughness includes one's collective beliefs (encompassing attitudes, values, behaviors, and emotions) which help in overcoming barriers to success.

Mental toughness is one of the psychological skills that is positively associated with competitive success and takes years to develop (Drees & Mack, 2012). A variety of competitive and non-competitive experiences, key personnel, and environmental influences were crucial to the development of mental toughness (Thelwell et al., 2010). Mental toughness is thought to be particularly pertinent for high-energy demanding combative sports like wrestling because exhausting physical efforts are required to maximize performance (Gould et al., 1987).

Concentration and mental toughness are the margins of victory, said Bill Russell, the legendary basketball player. In fact, concentration is the master skill of mental toughness, says Goldberg (2013), "Your training and health being equal, what you concentrate on at meets is the main cause of your best and worst swims". Goldberg (2013) goes on to add that of all the mental skills that make up the mental toughness umbrella, by far the two most critical ones are relaxation: the ability to stay calm and composed under pressure, and concentration: the ability to focus in on what's important and let go of everything else. Without these two critical mental skills, you will be completely lost as an athlete. Concentration and the ability to focus under adversity is what championship athletes do best. Concentration in sports is almost always important, but athletes at elite level have less room for error than others and very small physical inconsistencies in movement can have huge impacts on performance outcome. If an athlete lacks concentration then his athletic abilities will not be effectively or efficiently applied to the task and a small mental distraction can potentially cause a total collapse. Kumar (2009) found that successful swimmers, canoeing and kayaking players had significantly higher level of concentration abilities as compared to unsuccessful players.

While the term mental toughness is frequently used colloquially to describe athletic success, empirical support for the relationship between mental toughness and performance success has not been fully established (Newland et al., 2013). There is a need for more research on the relationship between mental toughness, concentration and performance. The underlying assumption is that mental toughness enhances performance, but supporting research is scarce (Newland et al., 2013). Only a few of the studies have examined gender differences in mental toughness. While Nicholls et al. (2009) reported that males were more mentally tough than females, gender differences have been reported on self-confidence and anxiety management and females scored lower on both constructs (Mahoney et al. 1987; Meyers et al. 1999). Though literature suggests gender differences are likely to exist

in self-reported mental toughness but findings are far from conclusive, specifically keeping in view sports specific attributes of mental toughness. Newland et al. (2013) suggest that future research should more carefully examine gender differences in mental toughness. Recognition of these differences is essential for coaches and practitioners who implement techniques to foster psychological skills that are consonant with mental toughness in athletes of either gender. Since it is being thought that the constituents of mental toughness differ in particular sports (Bull, 2006), and different games require different degree of concentration, this research was, therefore, undertaken to explore mental toughness among wrestlers.

Method and Procedure

For the purposes of this study, the wrestlers (N=80) participating at national (N=40) and international levels (N=40) from the two gender groups in the age group of 18 to 25 years (mean age 22.5 years) were selected as subjects. The subjects were administered the Mental Toughness Inventory (Middleton et al., 2005) and were asked to work on concentration grid exercise (Harris and Harris, 1984). As per the instructions provided in the respective test manuals, high scores indicated higher level of mental toughness and concentration. The results were statistically analyzed by using 2X2 factorial design and the descriptive values like mean score and standard deviation were worked out. To obtain results regarding interrelationship between the selected psychological constructs, Pearson Product-Moment Correlation was also worked out. For the purposes of this research, the level of signification was set at 0.05.

Results

Table – 1(a)
2x2 ANOVA results with regard to the Two Performance Groups and the two Gender Groups of Wrestlers on *Mental Toughness*

Source	SS	df	MS	F value	Sig.
Performance	10057.61	1	10057.61	16.87**	0.000
Gender	78.01	1	78.01	0.13	0.719
Performance X Gender	750.31	1	750.31	1.259	0.265
Within	45304.050	76	596.106		

** p<0.01

Table – 1(b)
Mean & SD values with regard to the Two Performance Groups and the two Gender Groups of Wrestlers on *Mental Toughness*

Variable	Group	National	International	Male	Female
Mental Toughness	Mean	235.28	257.70	245.50	247.48
	SD	29.32	17.97	29.33	24.05

The ANOVA results in Table – 1(a) above depict that there were significant differences on mental toughness among the wrestlers performing at the two performance levels (F value being 16.87, $p < 0.01$). The mean scores in Table-1(a) have revealed that International wrestlers had a higher mean score of 257.70 as compared to 235.28 obtained by the National level wrestlers. These results demonstrate that the International wrestlers possessed significantly higher level of mental toughness as compared to the National wrestlers. In combative sports like wrestling, mental toughness is the ability which helps the players to face the onslaught of the opponent and still gave out their better performance. It motivates them to bear the pain and agony, and still pushes them forward to perform better than their opponents. Crust and Azadi (2010) also reported that the athletes of county standard and above had significantly higher levels of MT than club / University athletes. However, no significant gender differences have been noticed among the wrestlers.

Table – 2 (a)
2x2 ANOVA results with regard to the Two Performance Groups and the two Gender Groups of Wrestlers on Concentration

Source	SS	df	MS	F value	Sig.
Performance	7.20	1	7.20	0.75	0.389
Gender	84.05	1	84.05	8.75**	0.004
Performance X Gender	6.05	1	6.05	0.63	0.43
Within	729.9	76	9.60		

** $p < 0.01$

Table – 2 (b)
Mean & SD values with regard to the Two Performance Groups and the two Gender Groups of Wrestlers on Concentration

Variable	Group	National	International	Male	Female
Concentration	Mean	11.30	11.90	10.58	12.63
	SD	3.45	3.02	2.96	3.21

Significant differences were observed between the two gender groups ($F=8.75$, $p < 0.01$, Table – 3a) on the variable concentration. The mean scores, as projected in Table-3(b), reveal that female wrestlers, having obtained a higher mean score of 12.63, were found to have significantly higher level of concentration abilities as compared to the male players who had lower mean score of 10.58. Concentration is one of the main mental qualities that are important for successful performance in most sports. If the athlete lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task (Mackenzie, 1997). Ingahalikar et al. (2013) suggest that in females, the neural wiring goes between the left and right hemispheres, suggesting that they facilitate communication between the analytical and

intuition. They also found that females outperformed males on attention, word and face memory, and social cognition tests. However the differences between the two performance groups have not been found to be significant.

Table – 3

Results regarding Correlation between *Mental Toughness* and *Concentration*

Group	Variable – 1	Variable – 2 : Concentration
International Wrestlers	Mental Toughness	.059
National Wrestlers	Mental Toughness	-0.144
Overall Male Wrestlers	Mental Toughness	-0.178
Overall Female Wrestlers	Mental Toughness	0.155

** p<0.01

As has been depicted in Table-3, no significant correlation has been noticed between mental toughness and concentration with regard to all the groups of wrestlers between mental toughness and concentration indicating that these psychological constructs did not influence each other for this sports group.

Findings and Conclusion

In the present study the international wrestlers have been found to have significantly higher level of mental toughness as compared to those participating at the national level. Mental toughness is an attribute which has long been considered to be associated with superior performance in sports. Golby and Sheard (2004) have also reported professional rugby league footballers performers playing at the highest standard (International players) having scored significantly higher in all three hardiness subscales (commitment, control and challenge) and in two of the seven mental toughness subscales (negative energy control and attention control). Newland et al. (2013), however, found no differences between starters and non-starters basketball players and suggest that it is possible that the constituents of mental toughness may differ in particular sports. As Bull (2006) suggested, future research, therefore, need to focus on sport specific attributes of mental toughness. With regard to concentration abilities among the participants, the female wrestlers have been found to have significantly higher level of concentration abilities as compared to male wrestlers. No significant interrelationship has been noticed between Mental Toughness and Concentration among the subjects.

References:

Bull, S. J., Shambrook, C. J., James, W., & Brooks, J. (2005). Towards an understanding of mental toughness in elite English cricketers. *Journal of Applied Sport Psychology*, 17(3), 209-227.

- Clough PJ, Earle K, Sewell D. (2002). Mental toughness: the concept and its measurement. In: Cockerill I., *Solutions in sport psychology*. London: Thomson; p. 32-43.
- Crust, L., and Azadi, K. (2010). Mental Toughness and Athletes' use of psychological strategies. *European Journal of Sport Science*, Volume 10, Issue 1, 43-51.
- Drees, M. J., and Mack, M. G. (2012). An Examination of Mental Toughness over the Course of a Competitive Season. *Journal of Sport Behavior*, Vol. 35 (4), 377 – 386.
- Golby, J., & Sheard, M. (2004). Mental toughness and hardiness at different levels of rugby league. *Personality and Individual Differences*, 37, 933-942.
- Goldberg, A. (2013). Concentration: the master skill of mental toughness. <http://www.usaswimming.org/ViewNewsArticle.aspx?TabId=1504&itemId=5202&mid=9388>
- Gould, D., Dieffenbach, K., & Moffatt, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology*, 14, 172-204.
- Gould, D., Hodge, K., Peterson, K., & Petlichkoff, L. (1987). Psychological foundations of coaching: Similarities and differences among intercollegiate wrestling coaches. *The Sport Psychologist*, 1, 293-308.
- Gucciardi DF, Gordon S, Dimmock JA. (2008). Towards an understanding of mental toughness in Australian football. *Journal of Applied Sport Psychology*. 20:261-81.
- Hanton, S., Evans, L., & Neil, R. (2003). Hardiness and the competitive trait anxiety response. *Anxiety, Stress, and Coping*, 16 (2), 167-184.
- Harris, D.V and Harris, B.L. (1984). *Concentration Grid Exercise*. New York: Leisure Press.
- Kuan G, Roy J. (2007). Goal profiles, mental toughness and its influence on performance outcomes among Wushu athletes. *J Sports Sci Med.*; 6:28-33.
- Mackenzie, B. (1997) *Psychology* [WWW] Available from: <http://www.brianmac.co.uk/psych.htm> [Accessed 4/1/2014].
- Madhura Ingalhalikar, Alex Smith, Drew Parker, Theodore D. Satterthwaite, Mark A. Elliott, Kosha Ruparel, Hakon Hakonarson, Raquel E. Gur, Ruben C. Gur, and Ragini Verma. Sex differences in the structural connectome of the human brain. PNAS, December 2, 2013 DOI: 10.1073/pnas.1316909110
- Mahoney MJ, Gabriel TJ, Perkins TS. (1987). Psychological skills and exceptional athletic performance. *Sport Psychol.*; 1:181-99.
- Meyers MC, Bourgeois AE, LeUnes A, Murray NG. (1999). Mood and psychological skills of elite and sub-elite equestrian athletes. *J Sport Behav.*; 22:399-409.

- Middleton, S.C., Marsh, H.M., Martin, A.J., Richards, G.E. and Perry, C. (2005) Discovering mental toughness: A qualitative study of mental toughness in elite athletes. *Psychology Today*, 22, 60-72
- Middleton, S.C., Marsh, H.W., Martin, A.J., Richards, G.E., and Perry, C. (2005). *Developing a Test for Mental Toughness: The Mental Toughness Inventory (MTI)*. Self-Research Centre. University of Western Sydney, Australia.
- Newland, A., Newton, M., Finch, L., Harbke, C. R., and Podlog, L. (2013). Moderating variables in the relationship between mental toughness and performance in basketball. *Journal of Sport and Health Science* (2), 184-192.
- Nicholls, A. R., Polman, R. C., Levy, A. R., Backhouse, S. H. (2009). Mental toughness in sport: Achievement level, gender, age, experience, and sport type. *Personality & Individual Differences*, 47, 73-75.
- Thelwell R, Weston N, Greenlees I. (2005). Defining and understanding mental toughness within soccer. *Journal of Applied Sport Psychology*, 17:326-32.
- Thelwell, R. C., Such, B. A., Weston, N. J. V., Such, J. D., & Greenless, I. A. (2010). Developing mental toughness: Perceptions of elite female gymnasts. *International Journal of Sport and Exercise Psychology*, 8, 170-189.