

Psychological Performance among Senior National Athletes of Sports Authority of India

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(Received 03 January 2014 – Accepted & Published 17 January 2014)

Abstract

Background: The present study was planned with the aim to examine mental toughness in national campers of Sports Authority of India, Netaji Shubas Southern Centre, Bangalore. **Methods:** The sample was comprised of 133 athletes aged between 20-30 Years from 7 sports viz., Athletics, Cycling, Basket Ball, Kabaddi, Volley Ball, Walkers, and Weight Lifting. Psychological Performance Inventory was administered under standardized conditions. One-Way ANOVA was applied to assess the mean differences of mental toughness among the athletes. **Results:** It showed significant differences among the Team game players on different dimensions of Mental Toughness. **Key words:** Mental Toughness, National Athletes, Psychological Performance

INTRODUCTION

Mental toughness is defined as an unshakeable perseverance and conviction towards some goal despite pressure or adversity (Loehr 1986). Sport psychologists (researchers and practitioners), coaches, sports commentators, sports fans, and athletes acknowledge the importance of mental toughness in sporting performance (Goldberg, 1998; Hodge, 1994; Tunney, 1987; Williams, 1988). In early work on the issue, Loehr (1982, 1986) emphasized that athletes and coaches felt that at least fifty percent of success is due to psychological factors that reflect mental toughness. Similarly, Gould, Hodge, Perterson, and Petlichkoff (1987) emphasized that coaches feel that mental toughness is important in achieving success, while Norris (1999) has emphasized the importance of mental toughness in developing champion athletes.

Gucciardi et al. (2009) defined mental toughness as a set of values, approaches, perceptions and inherent emotions acquired through experience with sports in general or a specific sport in particular as a procedure adopted by the individual to examine and respond to conflicts, challenges and pressures.

Jones et al. (2007) made the most recent contributions to the definition and attributes of mental toughness. His study found 30 characteristics of mental toughness which were cluster around 13 subcategories ; belief, focus, using long term goals as the source of motivation, control of the training environment, pushing yourself to the limit, belief during competition, staying focused, regulating performance, handling pressure, awareness and control of thoughts and feelings, controlling the competition environment, handling failure, handling success.

Taylor (1995) stated that each sport has special physical, technical characteristics which require special skills for athletes. For example in sports that explosiveness will differ greatly from those that require endurance, sports which require fine motor skills in contrast sports which require gross motor skills will influence the type of mental skills that is done (shooting in contrast power lifting), the sports that less than a minute has significantly different psychological

demands than one that requires three hours. For example 100- meter running in contrast baseball game (Taylor, 1995). Researchers of sport psychologists (Mahony et al, 1987) indicated that there is a difference between psychological profile of athletes of team sports and individual sports. Cox & Liu (1996) found that athletes of individual sports cannot rely on the teammate have higher level of preparation. Research by Gotwals and Wayment (2002) showed that type and nature sports are different in terms of some features. Jones & Hanton (1995) stated that athletes in different sports during competition give different responses to stimulates and according to mental skills their interpretation is different from the anxiety and also believe that skills which in the open skills sports (which are preferably group) are should not necessarily be used in the closed skills sports (which are more individual). In addition to psychological skills construct, athletes for achieve to their sport goals must have been desire for motivation success. Motivation success is considered as one of the main characteristics of successful performance and lead to successful performance (Weinberg & Gould, 1995). Research by Wartenberg and Maccutcheon (1998) showed that male athletes of hockey sport than athletes recreational sports gained better scores in winning oriented. The competitive nature of sport and perform under stressful condition caused to each athletes experience different emotions that can impact on sport performance. Athletes understand and recognize, how to regulate and dealing with negative emotion in certain situation needed strategies and skills in order to control and manage their emotions.

Only few studies have researched the attributes of mental toughness within a single sport by producing variations in mental toughness attributes (Minnix, 2010). Gould, Hodge, Peterson and Petlichkoff (1987) reported that 82 percent of wrestling coaches ranked mental toughness as the primary quality related to competitive success. Williams (1998) denoted that mental toughness might be more important in determining the final outcome of a sporting event than factors such as speed and ability. Recently, rigorous scientific inquiries have lead to a more complete understanding of mental toughness (Bull, Shambrook, James, and Brooks, 2005; Connaughton, Wadey, and Hanton, 2008; Jones, Hanton, and Connaughton, 2002, 2007).

By keeping in mind above literature it becomes evident that mental toughness in an important constructs to be studied in sports. It is assumed as an important factor in success at competition. It would really be interesting to conduct such research which will work as a guiding factor in competition outcome. Besides, the present study was designed to gain a deeper insight into mental toughness so that it may provide practicable recommendations for coaches, which could be inculcated into concrete strategies so that the performance of players would be enhanced up to the optimum level.

Aim of the current research was to assess the Mental Toughness among different sport Players. In objective separate profiles of subjects from different sports on the variable of mental toughness will be investigated. An alternate hypothesis was formulated as “There would be a significant difference among different sport Players on level of Mental Toughness”.

METHODOLOGY

Sample

The sample consisted of 133 male and female (athletes) respondents from Sports Authority of India's (SAI) who were preparing for various international competitions. The sample comprised of athletics((n=37), cycling (n= 23), basket ball (n=19), kabaddi (n=18), volley ball(n=16), walkers(n=5), and weight lifting(n=15) within the age range of 21-32 years .

The sample was selected from Sports Authority of India, Netaji Subhas Southern Centre, Bangalore.

Instruments

Mental Toughness measure: Psychological Performance Inventory: (PPI;Loehr, 1986). The PPI is a 42-item self-report instrument designed to measure factors that reflect mental toughness. All questions in the PPI were answered using a 5-point Likert scale, ranging from '1' (Almost Always) to '5' (Almost never). Six items subsume each of the following seven factors: *Self-confidence. Negative energy. Attention control. Visual and imagery control: Motivation level: Positive energy: and Attitude control.*

Statistical Analysis

One way analysis of variance (ANOVA) was applied to find out the significant differences among athletes with regarding to mental toughness. Least Significant Differences (LSD) was applied to see the mean difference, where ever 'F' values were found significant in ANOVA among mean scores of athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting disciplines. Data was analyzed using the Statistical Package of Social Science (SPSS) version 17.0. The level of significance was set at 0.05. Mean, SD were computed for all the seven variable of Psychological Performance Inventory (PPI).

RESULTS AND DISCUSSION

Table 1: Shows Mean, Standard Deviation on Different Variables of Mental Toughness of Athletics, Cycling, Basket Ball, Kabaddi, Volley Ball, Walkers, and Weight Lifting as Measured by Psychological Performance Inventory (PPI).

Variable	Game	N	Mean	SD
Self confidence	Athletics	37	24.56	3.43
	Cycling	23	24.95	2.67
	basket ball	19	23.47	2.16
	Kabaddi	18	23.38	2.19
	volley ball	16	23.68	1.77
	Walkers	5	26.20	.83
	Weight Lifting	15	25.73	1.86
Negative energy control	Athletics	37	19.83	3.59
	Cycling	23	22.17	2.67
	basket ball	19	21.15	3.56
	Kabaddi	18	21.22	2.26

	volley ball	16	21.81	2.31
	Walkers	5	23.60	2.40
	Weight Lifting	15	19.60	2.84
Attentional control	Athletics	37	21.43	4.32
	Cycling	23	22.34	3.53
	basket ball	19	21.52	1.54
	Kabaddi	18	21.55	1.61
	volley ball	16	22.25	1.73
	Walkers	5	23.60	2.07
	Weight Lifting	15	20.33	2.76
Visualization/ imagery control	Athletics	37	24.75	2.98
	Cycling	23	25.21	2.79
	basket ball	19	23.89	1.62
	Kabaddi	18	23.88	1.71
	volley ball	16	24.37	1.36
	Walkers	5	24.40	1.81
	Weight Lifting	15	25.26	1.98
Motivation level	Athletics	37	24.75	2.72
	Cycling	23	26.86	2.30
	basket ball	19	24.68	1.05
	Kabaddi	18	24.77	1.11
	volley ball	16	25.53	.72

	Walkers	5	27.40	1.34
	Weight Lifting	15	25.53	1.45
Positive energy control	Athletics	37	24.05	3.50
	Cycling	23	25.52	1.99
	basket ball	19	23.89	1.59
	Kabaddi	18	23.94	1.62
	volley ball	16	24.93	1.38
	Walkers	5	27.40	1.14
	Weight Lifting	15	24.00	1.96
Attitude control	Athletics	37	24.43	3.10
	Cycling	23	25.26	2.35
	basket ball	19	23.68	1.94
	Kabaddi	18	23.66	2.00
	volley ball	16	23.00	1.54
	Walkers	5	27.60	1.30

Figure I: Represents Mean Scores of Different Games Players on the Variables of Mental Toughness as Measured by Psychological Performance Inventory (PPI)

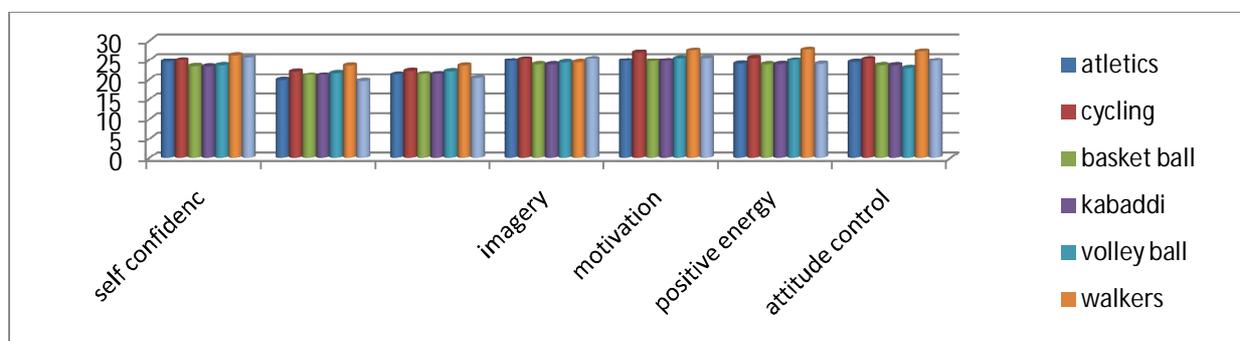


Table 2: Shows One –Way ANOVA of Self Confidence, Negative Energy Control, Attentional Control, Imagery, Motivation, Positive Energy, and Attitude Control of Athletics, Cycling, Basket Ball, Kabaddi, Volley Ball, Walkers and Weight Lifting

Variable		Sum of Squares	df	Mean Square	F	Sig.
Self confidence	Between Groups	93.852	6	15.642	2.324	.037
	Within Groups	848.223	126	6.732		
	Total	942.075	132			
Negative energy control	Between Groups	156.673	6	26.112	2.898	.011
	Within Groups	1135.206	126	9.010		
	Total	1291.880	132			
Attentional control	Between Groups	64.085	6	10.681	1.117	.356
	Within Groups	1205.013	126	9.564		
	Total	1269.098	132			
Imagery	Between Groups	35.901	6	5.983	1.099	.367
	Within Groups	686.174	126	5.446		
	Total	722.075	132			
Motivation	Between Groups	101.937	6	16.989	4.559	.000
	Within Groups	469.507	126	3.726		
	Total	571.444	132			
Positive energy	Between Groups	98.746	6	16.458	2.927	.010
	Within Groups	708.502	126	5.623		
	Total	807.248	132			
Attitude control	Between Groups	108.953	6	18.159	3.381	.004
	Within Groups	676.821	126	5.372		

One-way Analysis of variance (ANOVA) for the variable of Self-Confidence revealed Fvalue of 2.324 which is significant at $p < .05$ level of significance. It shows that there are Significant differences among athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable Negative Energy Control revealed F-value of 2.898 which is at $p > 0.5$ level of significance which implies that there exists significant difference among the athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable Attention Control revealed Fvalue of 1.117 which is non significant at $p < .05$ level of significance. This shows that there are no significant differences among athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable and Imagery Control Showed F-value of 1.099 which is non significant at $p < .05$ level of significance. This indicates that there are no significant differences among athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable Motivation Level depicted Fvalue of 4.559 which is significant at $p < .05$ level of significance. This shows that there are significant differences among athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable Positive Energy Control revealed F-value of 2.927 which is significant at $p < .05$ level of significance. This depicts That there are significant differences among the athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

One-way Analysis of variance (ANOVA) for the variable Attitude Control reveals Fvalue Of 3.381 which is significant at $p < .05$ level of significance. This indicates that there are significant differences among the athletics, cycling, basket ball, Kabaddi, volley ball, walkers, and weight lifting.

It is obvious that high score on mental toughness indicates that better in feeling confidence, controlling negative emotions, ability to focus, become energized and maintaining positive attitude.

From overall observation, walkers are mentally tougher than all other games followed by cycling. The present research was planned to assess athletes from various sports on different components of Mental Toughness as measured by Psychological Performance Inventory. Based on the review of literature the following hypothesis was proposed for Mental Toughness: "There would be a significant difference among athletes from various games on level of Mental Toughness".

A glance at Multiple Comparisons (LSD Post-hoc test) of mental toughness (Table 3) revealed that walkers were significantly higher on mental toughness than all other games viz.. Athletics, cycling, Basket ball, Kabaddi, Volley ball, Walkers, and Weight lifting. The Possible reason for this result might be self confidence, concentration, and commitment positive attitude.

Horsburgh et al. (2009) have suggested that mental toughness appears to have a strong genetic component. So it's not only team sports that influence mental toughness but Genetic component in athletes and mental toughness as a personality trait also have significant contribution in sports outcome. From the results of the present study it became clear that there are differences in mental toughness among different game players. But little evidence is available with regard to differences in mental toughness among different game players. More comprehensive research is required to generalize results of current study.

Recommendations

Coaches, athletes and sports psychology practitioners have become increasingly interested in penetrating the explanations for why and how the degree of mental toughness vary among who participate in sport. The results of the current study yielded some important information for coaches, athletes and sports psychology consultants. Coaches that have an in-depth knowledge of their athlete's mental toughness could develop effective training regimens for each individual athlete or groups of athletes. Considering the favoring fact that mental toughness can offer higher success to the performer, this research would be beneficial for those trying to construct and develop this mental skill.

CONCLUSIONS

From the results of the current study following conclusion can be drawn. Firstly, the walkers were more mentally tough followed by cycling than the rest of their counter parts viz., Athletics, Basket ball, Kabaddi, Volley ball, and Weight Lifting.

All the 6 games players were Mentally Tough as their mean scores were higher than average mean scores of the scale.

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