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Mental toughness among district, state and national level kabaddi players

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Abstract

The purpose of this study was to compare Mental Toughness among District Level, State Level and National Level Kabaddi Players. For the purpose of this study Sixty (N=60), Male subjects between the age group of 18-28 years (Mean \pm SD: Age 22.01 \pm 2.31 (yrs), Body Height 168.85 \pm 4.74 (cm), Body Mass 65.8 \pm 3.53 (kg)) volunteered to participate in the study. The investigator has used the questionnaire for measuring all the dimensions of mental toughness of the subjects and their overall mental toughness. The Statistical Package for the Social Sciences (SPSS) was used for all analyses. To conclude, it is significant to mention in relation to Ability to Handle Pressure, Concentration, Motivation and Mental Toughness that results of Analysis of Variance (ANOVA) among Kabaddi Players (i.e. District Level, State Level and National Level) were found statistically insignificant ($P>.05$). Furthermore, in relation to Reboundability and Confidence that result of Analysis of Variance (ANOVA) among Kabaddi Players (i.e. District Level, State Level and National Level) were found statistically significant ($P<.05$).

Keywords: mental toughness, reboundability, ability to handle pressure, concentration, confidence, motivation

1. Introduction

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 (Jones *et al.* 2002) ^[1]. The concept of mental toughness (MT) originated from the literature on hardiness (Maddi, 2002) ^[2].

The lack of clarity and consistency regarding mental toughness is due, in part, to a significant gap in the literature. Many popular literature sources such as (Loehr, 1986) ^[3] and (Kuehl, and Tefertiller, 2005) ^[4], attempt to define and develop mental toughness programs. These sources provide inconsistent descriptions of mental toughness, not essential components. The empirical research on the construct of mental toughness is very sparse. In fact, Jones *et al.* 2002 ^[1] is the first empirical source that attempted to identify the components or attributes of mental toughness or a construct surrounding mental toughness. In 2002, Jones *et al.* recognized the need for clarification of mental toughness and attempted to define and identify the attributes of mental toughness as perceived by ten elite sport performers. This empirical study resulted in a definition of mental toughness and the identification of 12 attributes of a mentally tough performer. An “unshakeable belief in ones abilities” is a pertinent feature of MT and widely supported to be key to athletic success (Lane, 2014) ^[5].

Individual sports such as archery (Norlander, Bergman & Archer, 1999) where performance is to be conducted under concentration and with an audience are particularly challenging. A study (Kim *et al.* 2015) ^[7] examined how different factors affected results in Korean archery.

2. Material and Methods

2.1 Selection of Subjects

For the purpose of the present study, Sixty (N=60), Male subjects between the age group of 18-28 years (Mean \pm SD: Age 22.01 \pm 2.31 (yrs), Body Height 168.85 \pm 4.74 (cm), Body Mass 65.8 \pm 3.53 (kg)) volunteered to participate in the study. The demographics of subjects are brought forth in Table-1

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Table 1: Subject’s Demographics of Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15)).

Variable (s)	Sample Size (N=60)			
	Total N=60	District Level (N ₁ =25)	State Level (N ₂ =20)	National Level (N ₃ =15)
Age (yrs)	22.01±2.31	21.4±2.16	22.2±1.82	22.8±2.93
Body Height (cm)	168.85±4.74	169.32±4.65	168.55±4.59	168.46±5.31
Body Mass (kg)	65.8±3.53	66.2±3.51	65.9±3.37	65±3.87

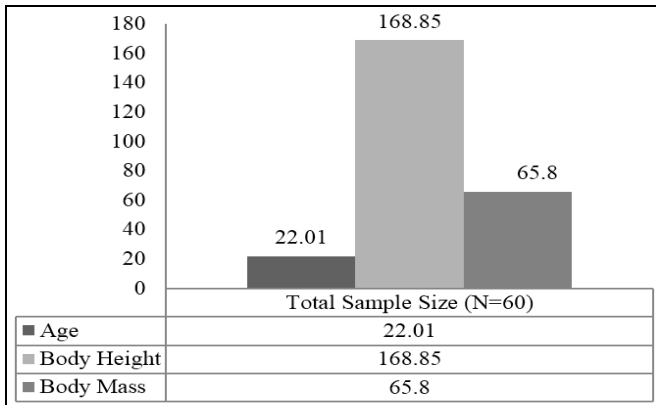


Fig 1: Subject’s Demographics of Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15))

3. Selection of Tools

This scale is a standardized tool which has already been used in many research/psychological investigations. After consulting relevant literature, a 30 items self-report inventory with five sub-scales was used to measure mental toughness. Each sub-scales consisted of six items measuring the seven fundamental areas of mental toughness viz. The five fundamental areas of mental toughness viz. (a) Reboundability (b) Ability to handle pressure (c) Concentration (d) Confidence (e) Motivation.

4. Statistical analysis

The Statistical Package for the Social Sciences (SPSS) was used for all analyses. The differences in the mean of each group for selected variable were tested for the significance of difference by One-way Analysis of Variance (ANOVA). For testing the hypotheses, the level of significance was set at 0.05.

5. Results

For each of the chosen variable, the result pertaining to Analysis of variance (ANOVA) among District Level, State Level and National Level Kabaddi Players on the variable Mental Toughness (i.e. Reboundability, Ability to Handle Pressure, Concentration, Confidence and Motivation) are presented in the following tables:

Table 2: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Reboundability.

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	9.757	2	4.878	3.784	.029
Within Groups	73.493	57	1.289		
Total	83.250	59			

The p-value is .029. The result is significant at $p < .05$.

- It is evident from Table 2 that results of Analysis of Variance (ANOVA) among Kabaddi Players (N=60) (i.e.

District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Reboundability were found statistically significant ($P < .05$). Since the obtained F-value was found significant, therefore, post-hoc test was employed to study the direction and significance of differences between paired means. The results of post-hoc test have been presented in Table 3.

Table 3: Analysis of post-hoc test among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Reboundability.

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
District Level (3.1333)	State Level	-1.06667*	.029
	National Level	-.62667	.248
State Level (4.2000)	District Level	1.06667*	.029
	National Level	.44000	.439
National Level (3.7600)	District Level	.62667	.248
	State Level	-.44000	.439

- A glance at Table 3 showed that the mean value of District Level group was 3.1333 whereas State Level had mean value as 4.2000 and the mean difference between both the groups was found 1.06667. This shows that the State Level group had demonstrated significantly better on Rebound ability than their counterpart’s 3.1333 group.
- The mean value of District group was 3.1333 whereas National had mean value as 3.7600 and the mean difference between both the groups was found .62667. This shows that the National group had demonstrated significantly better on Rebound ability than their counterpart’s 3.1333 group.
- The mean value of State group was 4.2000 whereas National had mean value as 3.7600 and the mean difference between both the groups was found .44000. This shows that the State group had demonstrated significantly better on Rebound ability than their counterpart’s 3.7600 group.

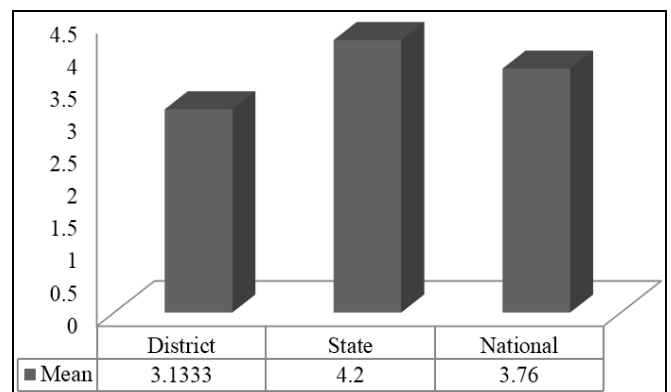


Fig 2: Graphical representation of mean scores of Kabaddi Players (N=60) (i.e., District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15)) with regards to Reboundability.

Table 4: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e., District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Ability to Handle Pressure.

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	.450	2	.225	.155	.857
Within Groups	82.950	57	1.455		
Total	83.400	59			

The p-value is .857. The result is not significant at $P>.05$.

Table 5: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Concentration.

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	1.543	2	.772	.656	.523
Within Groups	67.040	57	1.176		
Total	68.583	59			

The p-value is .523. The result is not significant at $P>.05$.

- It is evident from Table 4 that results of Analysis of Variance (ANOVA) among Kabaddi Players with regards to Ability to Handle Pressure were found statistically insignificant ($P>.05$).
- It is evident from Table 5 that results of Analysis of Variance (ANOVA) among Kabaddi Players with regards to Concentration were found statistically insignificant ($P>.05$).

Table 6: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Confidence.

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	36.450	2	18.225	25.214	.000
Within Groups	41.200	57	.723		
Total	77.650	59			

The p-value is .000. The result is significant at $P<.05$.

- It is evident from Table 6 that results of Analysis of Variance (ANOVA) among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Confidence were found statistically significant ($P<.05$). Since the obtained F-value was found significant, therefore, post-hoc test was employed to study the direction and significance of differences between paired means. The results of post-hoc test have been presented in Table 7.

Table 7: Analysis of post-hoc test among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Confidence.

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
District (4.0000)	State	.80000*	.028
	National	-1.00000*	.003
State (3.2000)	District	-.80000*	.028
	National	-1.80000*	.000
National (5.0000)	District	1.00000*	.003
	State	1.80000*	.000

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- A glance at Table 7 showed that the mean value of District group was 4.0000 whereas State had mean value as 3.2000 and the mean difference between both the groups was found .80000. This shows that the District group had demonstrated significantly better on Confidence than their counterpart's 3.2000 group.
- The mean value of District group was 4.0000 whereas National had mean value as 5.0000 and the mean difference between both the groups was found 1.00000. This shows that the National group had demonstrated significantly better on Confidence than their counterpart's 4.0000 group.
- The mean value of State group was 3.2000 whereas National had mean value as 5.0000 and the mean difference between both the groups was found 1.80000. This shows that the National group had demonstrated significantly better on Confidence than their counterpart's 3.2000 group

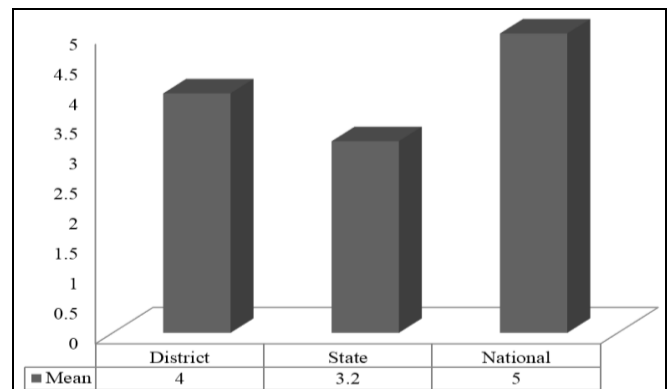


Fig 3: Graphical representation of mean scores of Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Confidence.

Table 8: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Motivation

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	1.477	2	.738	.614	.545
Within Groups	68.523	57	1.202		
Total	70.000	59			

The p-value is .545. The result is not significant at $P>.05$.

Table 9: Analysis of variance (ANOVA) results among Kabaddi Players (N=60) (i.e. District Level (N₁=25), State Level (N₂=20) and National Level (N₃=15) with regards to Mental Toughness

Source of Variation	Sum of Squares	D.F	Mean Square	F-value	p-value
Between Groups	13.960	2	6.980	1.781	.178
Within Groups	223.373	57	3.919		
Total	237.333	59			

The p-value is .178. The result is not significant at $P>.05$.

- It is evident from Table 8 that results of Analysis of Variance (ANOVA) among Kabaddi Player with regards to Motivation were found statistically insignificant ($P>.05$).
- It is evident from Table 9 that results of Analysis of Variance (ANOVA) among Kabaddi Players with regards

to Mental Toughness were found statistically insignificant ($P>.05$).

6. Hypothesis testing

It was hypothesized that there will be significant differences among District Level, State Level and National Level Kabaddi Players on the variable Mental Toughness (i.e. Reboundability, Ability to Handle Pressure, Concentration, Confidence and Motivation).

At this point in the research study, the researcher rejected the hypothesis of this study.

7. Conclusions

To conclude, it is significant to mention in relation to Ability to Handle Pressure, Concentration, Motivation, and Mental Toughness that results of Analysis of Variance (ANOVA) among Kabaddi Players (i.e. District Level, State Level and National Level) were found statistically insignificant ($P>.05$). Furthermore, in relation to Reboundability and Confidence that result of Analysis of Variance (ANOVA) among Kabaddi Players (i.e. District Level, State Level and National Level) were found statistically significant ($P<.05$).

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