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Difference in the components of mental toughness in players of body contact games

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Abstract

Mental toughness is the ability to consistently sustain one's ideal performances state during adversities in competition. Performing to one's potential requires good technique and mental skills. Ups and downs in performance are often directly traceable to psychological ups and downs. Players who create a special atmosphere within them perform consistently. Mental toughness is learnt, not inherited. The ultimate measure of mental toughness is consistency.

The purpose of the present study was to investigate the mental toughness of kabaddi, rugby and handball players. The subordinate purpose of the study was to find out (a) the difference between the mental toughness of kabaddi, rugby and handball players. The subjects for the study were 20 state & National level kabaddi players, 20 state & National level rugby players and 20 state and National level handball players. The age of the subjects ranged from 15 – 22. Data of the study was collected through mental toughness questionnaire by Alan Goldberg (2004) to find out the mental toughness of athletes. In order to examine the hypothesis of the study, descriptive statistics such as mean standard deviation and comparative statistics such as independent sample "t" test and analysis of variance were employed. The obtained values showed a significant difference between intergroup mental toughness on rugby players, handball players and kabaddi players.

Keywords: Mental toughness, kabaddi, handball, rugby

Introduction

Sports is an activity in which millions of people throughout the world participate and in which many more take and interest through the media. It is a social phenomenon, which involves competition and cooperation. The presence of spectators, the need to do well, the social class and the community of athletes all influence their participation of athletes all influence their participation and performance.

Sports psychologists and peak achievement trainers are continuously seeking cutting edge methods of achieving the most expedient route to confidence; trust in one's ability, appropriate focus, composure and explosive power with graceful, efficient movement patterns. This is characteristics of almost all high level performance including team and individual sports, as well as aesthetic performance in music, dance, artistry, etc... all are rewarded when graceful, yet powerful movements can be performed with seemingly effortless composure. Some days they can stick it out a little than other but eventually they reach the point where they make the decision to full of and slow down. Physically it feels good, but mentally they know they need to be stronger and be able to hold on longer before easing up. Mental strength is not going to compensate for lack of skill, but in close contests it can make difference between winning and losing. Research on mental toughness in sport and exercise as focus largely on individual difference, in which mental toughness is viewed as relatively stable characteristics. Clearly, active and passive toughness are the most relevant manipulation for athletes and can be applied in a number of practical ways. 'Toughness the ability to consistency perform towards the upper range of us talent and skill regardless of complete circumstances'. "Sports 90 % mental. Being mentally is what separates winners from losers, and people who persist versus quitters. Without the mental conditioning, you may get a negative attitude about your sport or just not enjoy it anymore". Yet for many athletes the physical aspect of trainee over shadow any mental conditioning "if u can learn how to develop mental toughness in sports, you can transfer it to other areas of your life".

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Many coaches and athletes often attribute their competitive successes to mental toughness which can be described as a natural or developed mental edge that helps athletes cope better than opponents and be consistent in maintaining determination, focus, confidence and control. Explicitly, Smith and Smoll in an earlier study defined mental toughness as the ability to deal with stress and adversity in a way that performance does not suffer under conditions that place high physical and psychological demands on the athletes. The implication of the above definition is that athletes under a tense competitive pressure can continue to be positive and productively be composed to deal with the challenges of their sport involvements. The present study is conducted to determine difference among body-contact sport performance with regards to mental toughness in different players. The contact sports athletes basically used in competitive activities and medical terminology to describe sports that emphasize or require physical contact between players. A (full) contact sport is any sport for which significant physical impact force on players, either deliberate or incidental, is allowed for within the rules of the game. Contact actions include tackling, blocking and a whole range of other moves that can differ substantially in their rules and degree of application. These sports are such as handball, kabaddi, and rugby.

Statement of the problems

The purpose of the present study is to investigate the mental toughness of players of different body contact games such as kabaddi, handball, and rugby.

Hypothesis

1. It is hypothesized that there would be a significant difference in inter-group mental toughness
2. It is hypothesized that there would be a significant difference in intra-group rebound ability
3. It is hypothesized that there would be a significant difference in intra-group ability to handle pressure
4. It is hypothesized that there would be a significant difference in intra-group concentration ability
5. It is hypothesized that there would be a significant difference in intra-group Level of confidence
6. It is hypothesized that there would be a significant difference in intra-group motivation

Delimitation

1. The study will be delimited to body contact games (kabaddi, handball, and rugby).
2. The study will also be delimited to 15 members in each group between the age group of 15-22 from Kerala state.
3. The study will be further delimited to mental toughness questionnaire

Methodology

Selection of subjects

Subjects for the study will be 20 players each of kabaddi, rugby and handball from various parts of Kerala between the age group of 15-22years.

Selection of the test item

The test item selected for this study was “Mental Toughness Questionnaire” by Alan Goldberg [2004].

Administration of the test items

The questionnaire measures various aspects of mental toughness such.

Rebound ability

It is the skill mentally bouncing back from setbacks and mistakes. Mental toughness depends on your ability to quickly leave your mistakes and failures behind you. Hanging onto big trouble, performance-wise. Athletes, who do well on their mistakes while the competition continues, end up making more.

To deal with the ability to handle pressure

Without the ability to stay calm in the clutch, an athlete will always underachieve peak performance demands that’s you are relaxed once the performance begins. While a little nervousness is critical for getting “up” for a game/match/race and performing at your best, [“good nervousness”] too much nerves [“bad nervousness”] will tighten your muscles and send your performance down the tubes.

To deal with your concentration ability

In every sport, your ability to focus on what’s important and block out everything else is one of the primary keys to performance excellence. Poor concentration is the major reason why athletes choke and get stuck in performance slumps. Getting psyched out or intimidated is a direct of concentrating on the wrong things.

To deal with your level of confidence and the factors that affect confidence

One characteristic of the mentally tough athlete is he/she possesses a confidence level seems to be unshaken by setbacks and failures. Under the pressure of competitions, low confidence will neutralized natural ability, hard work and talent, similarly, high confidence will enhance an athlete’s training and god giving talents, lifting their performance to the next level

To deal with motivation Motivation is the fuel that will drive your training to successful completion and the accomplishment of your goals. Without adequate motivation athletes get stuck having “permanent potential.” Without motivation you won’t put in the work necessary to become a winner. Your motivation allows you to pick yourself up after a setback and keep going.

Scoring of data

The questionnaire consisting of 30 questions: were divided in to five parts. Each measuring factors of mental toughness:

Question No.	Factors
1-6	Rebound ability
7-12	Ability to handle pressure
13-18	concentration ability
19-24	Level of confidence
25-30	Motivation

Interpretation

A score of 6 in any one of the five sections indicates a special strength in that area. A 5 indicates solid skill and 4 or less highlights that particular area as a mental weakness that needs to be addressed. For example a”6” in “rebound ability” indicates consistent ability to bounce back quickly from mistakes, failures and losses. A score of “2” or “3” in sections #2, handling competitive pressure, indicates the need for arousal control /relaxation training. Low scores in each sections highlight problem area. These “mental weaknesses” should then from mental training goals for you to help raise your overall performance to the next level. For example, a low score in the concentration section means the some of your

poor performance is a direct result of your inability to control your focus of attention before and/or during completion. By putting some time and energy in to practicing concentration exercises you will become a better overall athlete.

Overall score

A score of 26-30 indicates strength in overall mental toughness. Score of 23-25 indicates average to moderate skill in mental toughness. Score of 22 or below mean that you need to start putting more time in the mental training area.

Collection of data

The purpose of the study will be explained to the subject before administrating the questionnaire and they were asked to respond.

Statistical Procedure

One way Analysis of Variance (ANOVA) was employed to find out the intra-group differences. Where F values were found significant, LSD (Least Significant Difference) Post-hoc test was applied to find out the direction and degree of difference. For testing the hypotheses, the level of significance was set at 0.05.

Analysis of data and interpretation of the study

This chapter statistically treated data results, findings and discussion with regard to the mental toughness (rebound ability, ability to handle pressure, concentration ability, level of confidence and motivation) of kabaddi, rugby and handball players.

The data collected from various subjects were subjected statistical analysis using appropriate statistical tools. The following statistical tools were employed in the present investigation. Descriptive statistics: Descriptive statistics such as mean and standard deviation of the scores were calculated for summarizing the collected raw data.

Independent sample F test: independent sample f test has been applied for comparing four groups with respect each mental toughness variables. (Rebound ability, ability to handle pressure, concentration ability, level of confidence and motivation). Level of significance: the level of significance was fixed at 0.05 levels. P value: A calculated P value less than 0.05 is considered to be statistically significant. The data relating to mental toughness of kabaddi, rugby and handball players were collected and calculated the mean and SD. The significance of mean difference in the three groups is tested using F test. The details are shown in table below.

Table 1: Analysis of variance for inter-group mental toughness of kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	17.20	17.90	22.35	Between	312.10	2	156.05	14.27*
Standard deviation	4.20	3.32	2.03	Within	623.55	57	10.94	

*Significant at 0.05 level of confidence. Table value require significant at 0.05 for df 2 and 57 is 3.

The above table revealed that the ‘F’ value obtained is 14.27. Since this value is greater than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there shows a significant difference in for inter-group mental toughness of kabaddi, handball and rugby players.

The Scheffe’s post hoc test for finding out the difference between the paired means on inter-group mental toughness were carried out since the analysis of variance were found to be significant.

Table 2: scheffe’s test for the difference between the paired means on inter-group mental toughness

Group 1	Group 2	Group 3	Mean difference	Confidence interval
17.20	17.90	---	0.7	2.63
17.20	--	22.35	5.15*	
---	17.90	22.35	4.45*	

The Scheffe’s post hoc test revealed that the mean difference between the Kabaddi and Rugby players was 5.15, and the mean difference between the Handball and Rugby players was

4.45 were greater than the confidence interval value 2.63, there is a significant difference between the about said groups.

Table 3: Analysis of variance for intra-group rebound ability among kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	3	2.80	4.25	Between	24.70	2	12.35	8.29*
Standard deviation	1.45	1.36	0.72	Within	84.95	57	1.49	

*Significant at 0.05 level of confidence. Table value required for significant at 0.05 for df 2 and 57 is 3.16.

The above table revealed that the ‘F’ value obtained is 8.29. Since this value is greater than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there shows a significant difference in for intra-group rebound ability among kabaddi, handball and rugby players.

The Scheffe’s post hoc test for finding out the difference between the paired means on intra-group rebound ability were carried out since the analysis of variance were found to be significant.

Table 4: Cheffe’s test for the difference between the paired means on intra group rebound ability

Group 1	Group 2	Group 3	Mean difference	Confidence interval
3	2.80	---	0.2	0.97
3	---	4.25	1.25*	
--	2.80	4.25	1.45*	

The Scheffe's post hoc test revealed that the mean difference between the Kabaddi and Rugby players was 1.25, and the mean difference between the Handball and Rugby players was

1.45 were greater than the confidence interval value 0.97, there is a significant difference between the about said group

Table 5: Analysis of variance for intra-group ability to handle pressure among kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	3.45	3	4.35	Between	18.90	2	9.45	
Standard deviation	1.35	1.16	0.81	Within	73.50	57		7.33*

*Significant at 0.05 level of confidence. Table value required for significant at 0.05 for df 2 and 57 is 3.16.

The above table revealed that the 'F' value obtained is 7.33. Since this value is greater than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there shows a significant difference in for intra-group ability to handle pressure among kabaddi, handball and rugby players.

The Scheffe's post hoc test for finding out the difference between the paired means on for intra-group ability to handle pressure were carried out since the analysis of variance were found to be significant.

Table 6: Scheffe's test for the difference between the paired means on intra group ability to handle pressure

Group 1	Group 2	Group 3	Mean difference	Confidence interval
3.45	3	---	0.45	0.90
3.45	---	4.35	0.9*	
---	3	4.35	1.35*	

The Scheffe's post hoc test revealed that the mean difference between the Kabaddi and Rugby players was 0.9, and the Mean difference between the Handball and Rugby players

was 1.35 were greater than the confidence interval value 0.90, there is a significant difference between the about said groups.

Table 7: Analysis of variance for intra-group concentration ability among kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	2.85	2.95	4.55	Between	36.40	2	18.20	12.58*
Standard deviation	1.38	1.27	0.88	Within	82.45	57	1.44	

*Significant at 0.05 level of confidence. Table value required for significant at 0.05 for df 2 and 57 is 3.16.

The above table revealed that the 'F' value obtained is 12.58. Since this value is greater than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there shows a significant difference in for intra-group concentration ability among kabaddi, handball and rugby players.

The Scheffe's post hoc test for finding out the difference between the paired means on for intra-group concentration were carried out since the analysis of variance were found to be significant

Table 8: Cheffe's test for the difference between the paired means on intra group concentration ability

Group 1	Group 2	Group 3	Mean difference	Confidence interval
2.85	2.95	---	0.1	0.96
2.85	---	4.55	4.55*	
---	2.95	4.55	1.6*	

The Scheffe's post hoc test revealed that the mean difference between the Kabaddi and Rugby players was 4.55, and the mean difference between the Handball and Rugby players was

1.6 were greater than the confidence interval value 0.96, there is a significant difference between the about said groups.

Table 9: Analysis of variance for intra-group level of confidence among kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	3.8	4.7	4.80	Between	12.13	2	6.06	4.90*
Standard deviation	1.32	1.26	0.61	Within	70.60	57	1.23	

*Significant at 0.05 level of confidence. Table value required for significant at 0.05 for df 2 and 57 is 3.16.

The above table revealed that the 'F' value obtained is 4.90. Since this value is greater than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there shows a significant difference in for intra-group confidence among kabaddi, handball and rugby players.

The Scheffe's post hoc test for finding out the difference between the paired means on for intra-group confidence were carried out since the analysis of variance were found to be significant.

Table 10: Scheffe's test for the difference between the paired means on intra group concentration ability

Group 1	Group 2	Group 3	Mean difference	Confidence interval
3.8	4.7	---	0.9	0.89
3.8	-	4.80	1*	
---	4.7	4.80	0.1	

The Scheffe's post hoc test revealed that the mean difference between the Kabaddi and Rugby players was 1, and greater

than the confidence interval value 0.89, there is a significant difference between the about said groups.

Table 11: Analysis of variance for intra-group motivation among kabaddi, handball and rugby players

	Kabaddi	Handball	Rugby	Source of variance	Sum of squares	Degrees of freedom	Mean square	F value
Mean	4.10	4.45	4.35	Between	1.30	2	0.65	0.78
Standard deviation	1.02	0.82	0.87	Within	47.30	57	0.83	

Table value required for significant at 0.05 for df 2 and 57 is 3.16.

The above table revealed that the 'F' value obtained is 0.78. Since this value is lower than 3.16 ie. Table value required for significance at 0.05 for df 2 and 57, there is no significant difference in for intra-group motivation among kabaddi, handball and rugby players.

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Discussion of hypothesis

- There was a significant difference between mental toughness in kabaddi, rugby and handball players. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in inter-group mental toughness. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in intra-group rebound ability. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in intra-group ability to handle pressure. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in intra-group concentration ability. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in intra-group Level of confidence. This hypothesis is accepted.
- It is hypothesized that there would be a significant difference in intra-group motivation. This hypothesis is rejected.

Conclusion

Within the limits and limitations of the present study and on the basis of obtained results, the following conclusions have been drawn.

- There was a significant difference between mental toughness in kabaddi, rugby and handball players.
- There were significant differences in intra-group rebound ability, ability to handbale pressure, concentration and level of confidence.
- The was no significant difference in intra-group motivation.

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