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COMPARATIVE STUDY OF TRIBAL AND NON-TRIBAL HOCKEY PLAYERS ON BALL CONTROLLING WITH REFERENCE TO THEIR FAT PERCENT



Q

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ABSTRACT

n the present study, effect of body fat percent and tribal, non-tribal belongingness was observed on ball controlling ability of male hockey players of Chhattisgarh. To conduct the study 50 tribal male hockey players (Average age 21.67 years) and 50 nontribal male hockey players (Average age 23.12 years) from Chhattisgarh were selected as sample. The criterion of selection of sample was participation in inter collegiate hockey tournaments. SAI Hockey Skill Test was used to ascertain ball controlling ability of the selected subjects while selected anthropometric measurements were taken to assess percent body fat. 2x2 ANOVA technique was used in the present study.

Results reveal that ball controlling ability of male hockey players with lower level percent body fat was significantly higher as compared to that of male hockey players with higher levels of body fat percentage. It was also observed that ball controlling ability of tribal male players was far superior as compared to non tribal male hockey players. The two factor interaction effect of level of body fat percentage (high-low) and tribal non-tribal belongingness on ball controlling ability of male hockey players was not found to be statistically significant. It was concluded that body fat percentage as well as tribal-non tribal belongingness affect ball controlling ability of male hockey players but not when combined together.

KEYWORDS: Hockey, Ball control, percent body fat, tribal, non-tribal .

INTRODUCTION:

The fundamental characteristics of athletic excellence comprise of physical characteristics and body composition. It has also been reported that a particular sporting event require different body types and percent body fat. A low-body fat may improve athletic performance by improving the strength-to weight ratio [Wilmore and Costill, 2005]. The body fat percentage of a human or other living being is the total mass of fat divided by total body mass; body fat includes essential body fat and storage body fat. Therefore, the athletes in a particular sport must possess such typical characteristics which are of advantage to their performance.

Intermittent endurance with short sprinting is involved in field hockey. It has been observed in

the past that certain morphological and anthropometric characteristics play a big part as far as execution of hockey skills are concerned. It is even more so in a skill like controlling the ball while running. It is a known fact that tribals and non tribal do differ in body composition so it would be interesting to find out the effect of percent body fat and tribal non tribal belongingness on ball controlling ability of male hockey players of Chhattisgarh. Although Bhanot, 1983; Toriola, 1985; Terry et al., 1996; Sparling, 1998; Keogh et al , 2003; Sunderland and Nevill, 2005; Sharma et al., 2012; Tripathi et al., 2013; Jayaratnam and Dileep, 2013 have studied role of physiological, psychological and biomechanical aspects in hockey performance, no study yet has been conducted in which effect of percent body fat and tribal non tribal belongingness on ball controlling ability of Indian male hockey players is assessed, hence the present study was planned.

HYPOTHESIS :

It was hypothesized that body fat percent (high-low) and tribal, non tribal belongingness alone and in interaction with each other, will jointly influence ball controlling ability of male hockey players.

METHODOLOGY

Sample

To conduct the study 50 tribal male hockey players (Average age 21.67 years) and 50 non-tribal male hockey players (Average age 23.12 years) were selected as sample. The criteria of selection of sample was participation in Inter University hockey tournament.

Tools

To assess basic fundamental skills of hockey, i.e. ball controlling ability, three dimensional SAI Hockey Skill Test for Talent Spotting at Young Age was used. It consists of three items i.e. Shooting in the target (goal), Balancing the ball on the stick and Moving with the ball i.e. ball controlling ability. Only ball controlling aspect was used in the present study from the above test in which direction of scoring is lower the time taken denotes higher ball controlling ability. The reliability and validity of this test is scientifically established.

Selected anthropometric measurements used to calculate percent body fat were assessed by using standard method.

Procedure

The selected male hockey players completed SAI Hockey skill test item i.e. moving with the ball under the supervision of researcher. The stopwatch reading for each subject was recorded.

Percent body fat was calculated by the following formula :

[4.57/d) - 4.142]*100 where d = 1.0913 - 0.00116 * (tricep skinfold + sub scapular skinfold)

After tabulating scores related with SAI skill test and percent body fat, 2x2 ANOVA was used. To classify percent body fat into high and low level categories, Q1 and Q3 statistical technique was used. The scores falling above P75 (Q3) were termed as high percent body fat while scores lying below P25(Q1) were treated as low percent body fat. The obtained results are presented in table 1.

RESULTS :

Table 1 Effect of Percent Body Fat (A) x Tribal-Non Tribal Belongingness (B) on Ball Controlling Ability of Male Hockey Players (N=59)

		Tribal-Non Tribal	Monainal	
		Non Tribal Male Hockey Players (b ₁)	Tribal Male Hockey Players (b ₂)	Mean
Percent Body Fat (A)	High (a ₁)	N=16 M=4.73 S.D. = 0.62	N=19 M=4.53 S.D.=0.32	4.63
	Low (a ₂)	N=10 M=4.38 S.D.=0.42	N=14 M=4.00 S.D.=0.14	4.19
Marginal Mean		4.55	4.27	

ANOVA Summary

Source of Variation	SS	df	MS	F	_
А	2.708	1	2.708	9.65**	
В	1.123	1	1.123	4.00*	
AB	0.111	1	0.111	0.39 (NS)	
Within treatment	15.424	55	0.280		
(Error)					

* Significant at .05 level; ** Significant at .01 level; NS Not Significant

Table 1 reveals the following facts-

- F=9.65, an indicator of the main effect of percent body fat on ball controlling ability of male hockey players is statistically significant at .01 level. It reveals that the ball controlling ability of male hockey players with lower percent body fat (M=4.19) is significantly better than that of male hockey players carrying high percent body fat (M=4.63).
- F=4.00, an indicator of the main effect of tribal, non-tribal belongingness on ball controlling ability of male hockey players is statistically significant at .05 level. It reveals that the ball controlling ability of tribal male hockey players (M=4.27) is significantly better as compared to non tribal male hockey players (M=4.55).
- The F of 0.39, an indicator of interaction effect of percent body fat and tribal, non-tribal belongingness upon ball controlling ability of male hockey players turned out to be statistically insignificant.

DISCUSSION:

In the present study, main effect of percent body fat was observed upon ball controlling ability

of male hockey players. It is due to the fact the players with lower percent body fat tend to change direction with ease. This may be the reason that male hockey players with low percent body fat exhibited superior ball controlling ability as compared to male hockey players with higher percent body fat. Similar results were obtained by Meir et al. (2001) and Reilly et al. (2000) in their study but on soccer players.

In the present study, tribal male players showed better ball controlling ability as compared to non tribal male players. In the past also studies have shown difference in skill aspects of sportspersons on the basis of tribal, non tribal belongingness.

In the present study, joint action effect of percent body fat and tribal-non tribal belongingness was not observed upon ball controlling ability of male hockey players. This is quite normal because two independent variables are so strong that interaction of both of them is not possible statistically.

CONCLUSION:

On the basis of results, it was concluded that degree of percent body fat and tribal-non tribal belongingness alone and not in interaction with each other, influence ball controlling ability of male hockey players.

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