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## COMPARISON OF PERCENT BODY FAT BETWEEN TRIBAL AND NON TRIBAL FEMALE HOCKEY PLAYERS OF CHHATTISGARH



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### ABSTRACT

Percent body fat has been known to influence agility and flexibility of sportsperson. In this context it is an essential aspect in hockey because field hockey requires balance, flexibility and agility to execute certain fundamental skills in which motor movements are complex in nature. In view of this, researcher compared percent body fat of tribal and non tribal female hockey players of Chhattisgarh. To conduct the study 50 tribal origin female hockey players (Average age 19.62 years) and 50 non-tribal origin female hockey players (Average age 20.12 years) from Chhattisgarh were selected as sample. The criterion for selection of subjects was participation in inter collegiate hockey tournament and domicile of Chhattisgarh. Omron body fat analyser was used to assess percent body fat in selected subjects. Results reveal that percent body fat in non tribal female hockey players was significant higher as compared to tribal female hockey players. On the basis of results, it was concluded that body composition of tribal female hockey players makes them more suitable for sport such as field hockey as compared to non tribal female players.



**KEYWORDS :** *Tribal, Non Tribal, Percent body fat, Female hockey players.*

### INTRODUCTION :

Field hockey is an outdoor sport which requires flexibility, agility, endurance and anthropometric characteristics to execute certain fundamental skills. It has also been reported that physical characteristics and especially body composition have significant role as far as sports performance is concerned. Wilomore and Costill (2005)1 in their study showed that low body fat improves strength to weight ratio and thus improves sports performance.

Fat gives fuel to human body but it is equally true that excessive fat is detrimental to motor movements. In sports a certain amount of percent body fat is recommended for sportspersons so

essential energy requirements during the entire period of play is met. The ideal body fat percentage varies from sport to sport and it is gender specific also. In field hockey, range of ideal percent body fat for male players is between 8-15% while for female players the range is 12-18% (Wilmore, 1994)2. The variation in body fat percentage from ideal values leads to fatigue which ultimately affect performance of a sportsperson [Peter Van Hendel, 19823; Slater, 20054].

Keeping the importance of said variable i.e. percent body in terms of sports performance, the researcher decided to compare percent body fat between tribal and non tribal female hockey players of Chhattisgarh. The reason behind choosing female hockey players from Chhattisgarh is that it is a tribal dominated state and naturally intercollegiate hockey teams comprise quite a few tribal players.

The second reason behind this research is almost non existent literature. Although so many studies have been conducted by researchers to find out the impact of psychological, physiological, biomechanical, emotional factors on performance of field hockey players [Bhanot, 19835, Sparling, 19986, Sunderland and Nevill, 20057; Sharma et al., 20128; Tripathi et al., 20139] but none compared percent body fat of female hockey players in the backdrop of their ethnicity, hence to fill this void the present study was planned.

#### **Hypothesis:**

Percent body fat in female hockey players will vary according to their tribal, non-tribal belongingness.

#### **METHODOLOGY:**

To verify hypothesis, the investigator formulated following methodological steps.

#### **Sample:**

To conduct the study 50 tribal origin female hockey players (Average age 19.62 years) and 50 non-tribal origin female hockey players (Average age 20.12 years) from Chhattisgarh were selected as sample. The criterion for selection of subjects was participation in inter collegiate hockey tournament and domicile of Chhattisgarh.

#### **Tools:**

#### **Percent Body Fat:**

Percent body fat of the selected subjects was analysed by Omron Body Fat Analyser.

#### **Procedure:**

Percent body fat of selected subjects was evaluated by Omron Body Fat Analyzer in which instructions given in manual were followed strictly. After assessing percent body fat, obtained data was tabulated according to their respective groups. To compare percent body fat between tribal and non tribal female hockey players, statistical method 't' test was used. The obtained result is presented in table 1.

## RESULT AND DISCUSSION

**Table 1**  
**Comparison of Percent Body Fat between Tribal**  
**and Non Tribal Female Hockey Players**

Groups	Percent Body Fat		Mean Diff.	't'
	Mean	S.D.		
Tribal Female Hockey Players (N=50)	13.99	3.14		
Non Tribal Female Hockey Players (N=50)	16.61	3.47	2.62	3.94 (p<.01)

A perusal of statistical entries reported in table 1 shows significant difference in percent body fat between tribal and non tribal female hockey players. The mean difference of 2.62 and  $t=3.94$  shows that percent body fat was significantly higher in non tribal female hockey players ( $M=16.61$ ) as compared to tribal female hockey players ( $M=13.99$ ) at .01 level of statistical significance.

A closer examination of data also reveal that the mean percent body fat for tribal and non tribal female hockey players lies within the ideal range of 12-18% set for field hockey (females) but it was also noticeable that percent body fat of non tribal female hockey players is touching the upper limit while that of tribal female hockey players lie in lower limit of ideal percent body fat range.

Hence, the results clearly indicate the effect of ethnicity on percent body fat of tribal and non-tribal female hockey players which is no surprise because lifestyle and physical activity of tribal and non tribal players are entirely different and that is clearly reflecting in difference in percent body fat between tribal and non tribal female hockey players.

## CONCLUSION

On the basis of results, it was concluded that body composition of tribal female hockey players makes them more suitable for sport such as field hockey as compared to non tribal female players.

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