

COMPARISON OF PEAK EXPIRATORY FLOW RATE OF STATE LEVEL PLAYERS OF TEAM GAMES

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ABSTRACT

The purpose of the present study was to compare the peak expiratory flow rate between state level male players of Basketball and Baseball. For the purpose of this study, fifty (N=50) state level male players (Basketball=25, Baseball=25) from Bilaspur City (C.G.) were selected as subject for this study by using purposive sampling technique. The age of the subjects ranged between 14-16 years. To find out the significant differences between selected state level male players of Basketball and baseball, mean, SD and t- test was used with the help of SPSS software. The level of significance was chosen at .05. The results of the study concluded that the Significant difference was not found between selected state level male players of Basketball and Baseball on peak expiratory flow rate.

Keywords: Peak Expiratory Flow Rate, Male players, Basketball, Baseball.

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INTRODUCTION

Peak breath rate of flow refers to the peak breath rate of flow sustained by a healthy children employing a peak Flow Meter for a minimum of some milliseconds. Flow Meter by means that of demonstration. the very best of the 3 readings is taken because the PEFR worth.

PEFR is that the most flow rate generated throughout a forceful exhalation, ranging from full respiratory organ inflation. Peak rate of flow primarily reflects massive airway flow and depends on the voluntary effort and muscular strength of the patient (BheekieA, 2001)

PEFR as a activity of improvement perform was introduced by Hadorn in 1942, associate degreed was accepted in 1949 as an index of spirometry (Jain, Kumar and Sharma,1983)). The largest breath rate of flow achieved with a peakly forced effort from a footing of maximal inspiration, expressed in liters/min (American body part Society, 1995)

Several factors such as contractile power of respiratory muscles, elastic property of lung tissue, and airways resistance influence the maximal flow volume. Studies reveal that about twenty five percent of players suffer from breathing abnormalities, which hinder the endurance performance of a player. Mostly, the players did not aware about it. After the diagnosis of this factor, correction should made by the individual. Through the development of lung function, athletes, can improve the endurance performance to get the best results in competition. Physical exercises have little effect on lung volumes and capacities. But the vital capacity may increase slightly through maximal exercise and decrease in residual volume through performing the slight exercise, which is related to vital capacity.

The use of a single forced expiration to assess the ventilatory capacity is becoming increasingly popular, mainly because, as pointed out by Kennedy (1953), it is a much simpler and less tiring procedure than the maximum voluntary ventilation.

A number of factors influence PEFR in normal subjects. Age and height are the obvious ones. PEFR is correlated with height in children, PEFR is also correlated with some physical factors i.e. age and body surface area (Gupta, et.al. 1993).

Hsi, Hsu, Jenkins(1982) suggested that ventilatory functions of normal subjects can be predicted better by using sitting height, which reduced the racial differences in ventilatory functions. However, a study in which PEFR was determined in standing and sitting height indicated that the latter does not refine the prediction of the parameter (Gupta and Mathur, 1982). Low socio-economic standing, overcrowding of residence, and smoking have an adverse result on PEFR (Jain, Kumar and Sharma, 1983). PEFR is additionally influenced by varied environmental factors throughout childhood, level of physical activity (Jain, Kumar and Sharma, 1983). and presumably by comparatively poor intra-uterine growth (Pande,

et.al.1997) .Other authors have additionally joined lower PEFR to socio-economic standing and malnourishment (Singh and Peri, 1979).

Advantages of the utmost forced breath flow as a live of improvement capability square measure thought-about and therefore the history of the utilization of the measurement is reviewed. it's recommended that the utmost forced breath flow measured with the height flow meter is also found to be a convenient and reliable manner of estimating improvement capability (Wright and . McKerrow, 1959).

The average PEFR of healthy young Indian males and females is around five hundred and 350 lpm severally. The PEFR reaches a peak at regarding 18-20 years, maintains this level up to regarding thirty years in males, and regarding forty years in females, so declines with age. Indian (Dikshit, Raje and. Agrawal, 2005).

Roy, et.al. (1991) investigated the higher mean value of PEFR (lit/min) among the throwers followed by marathon runners, long distance runners and jumpers. PEFR value increases insignificantly with the increase in age. Finally, PEFR was found to be higher in elite sportsmen than non-sportsman Indian counterparts Singh (2014) found significant differences in PEFR among volleyball, hockey and handball players They also revealed that the volleyball players have low PEFR in comparison with the hockey and handball players. Mohiuddin, Jaleeli and Misbahuddin (2013) revealed that the significant improvement was found among athletes in their PEFR compared to control group. Significant correlations exhibited by sportsmen in weight, BMI and BSA with PEFR. Singh, and Kaur (2015) indicated the significant difference on peak expiratory flow rate among national level male players volleyball. cricket and baseball. Volleyball players were found superior compared to cricket and baseball players on peak expiratory flow rate.

Omar and Henry .(1991) indicated that the boys had higher PEFR than girls. The greater amount of PEFR was observed in Malays and the lesser amount in Indians for both sexes. Malay and Chinese boys did not differ significantly, but the levels of PEFR for Malay and Chinese boys were significantly higher than those for Indian boys. Taksande, et.al. (2008) expressed the positive correlation between age, height, weight and PEFR of males and females. The males had higher values of PFER than the females at all heights. Malik, Jindaland Banga (1982) found that PEFR in south Indian school children was lower than that observed in Western and North Indian children. Another study observed the PEFR values among North Indian school children in Punjab and found that the height and the standardized value of PEFR showed no rural-urban differences (Singh and Peri, 1979). An article reported higher predicted values of PEFR among children from Maharashtra than those in children from the other Indian states (Mahajan, et.al. 1984). A researcher measured the PEFR of healthy tribal children who were living at high altitude in the Himalayas. They found

that the values are comparable with those of North Indian urban children (Kashyap, Puri, Bansal, 1992). An investigator studied PEFR measurements in rural children of Rajasthan and found that they were lower than those reported for Caucasian and urban Indian children of the same height (Sharma, et.al. 2002) .

The purpose of the present study was to compare the peak expiratory flow rate between state level male players of Basketball and Baseball. It was also hypothesized that there may be significant difference between Basketball and Baseball players in Peak Expiratory Flow Rate.

MATERIALS AND METHODS

Sample:

For the purpose of this study, fifty state level male players (Basketball=25, and baseball=25) from Bilaspur (Chhattisgarh) were selected as a sample of this study.

Research Design:

The purposive sampling design was used for the selection purpose of sample and collection of data.

Tool Used:

The Peak flow meter was used to measure the peak expiratory flow rate (PEFR) of state level male players of two team games i.e Basketball and Baseball.

Statistical analysis:

To assess the state level players of two different team games on peak expiratory flow rate, mean, SD and t –ratio were computed. For testing the hypothesis, significant level was set 0.05 level of confidence. Statistical package of Social Science 16.0. was used for computation of collected data.

RESULTS AND DISCUSSION

To find out the significance differences between state level male Basketball and baseball players on peak expiratory flow rate, , mean, SD and t –ratio were computed and data pertaining to this has been presented in Table 1 and 2.

TABLE 1
DESCRIPTIVE STATISTICS OF PEAK EXPIRATORY FLOW RATE OF
SELECTED STATE LEVEL MALE BASKETBALL AND BASEBALL
PLAYERS OF BILASPUR CITY

Variable	Team Games	N	Mean	SD
Peak expiratory flow rate	Basketball	25	318.80	35.98
	Baseball	25	306.40	33.90

Mean scores on peak expiratory flow rate of state level male players of Basketball and Baseball games belong to Bilaspur, Chhattisgarh have been depicted in figure 1.

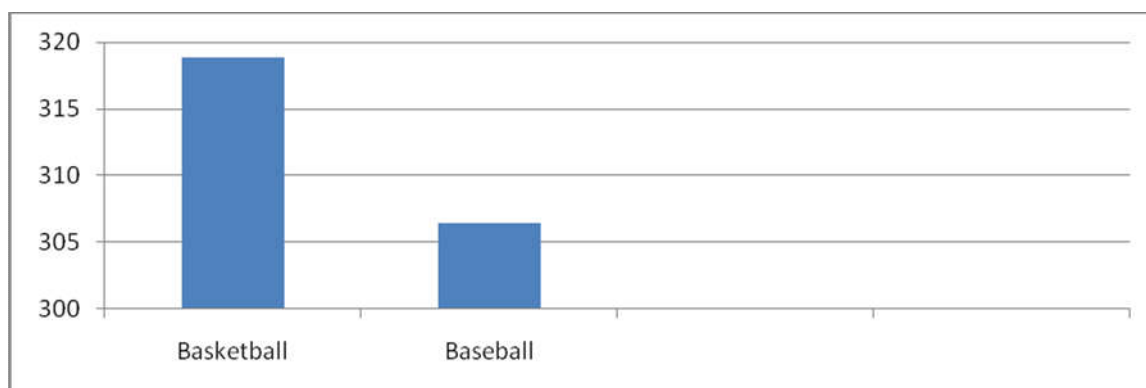


Figure 1: Mean Scores of peak Expiratory flow rate of State Level Male Players of Basketball and Baseball Games.

TABLE 2
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES
ON PEAK EXPIRATORY FLOW RATE OF STATE
LEVEL MALYERS OF BASKETBALL AND
BASEBALL GAMES

Variable	Team Games	Mean	MD	σ DM	t-ratio
Peak expiratory flow rate	Basketball Baseball	318.80 306.40	12.40	7.20	1.25

It is quite obvious from Table 2, that statistically significant difference was not existed between state level male players of Basketball and Baseball games, as the obtained t-value of 1.25 was less than the required $t_{0.05(48)}=2.01$.

DISCUSSION

Result presented in table 1 indicated that peak flow exiratory rate in Basketball players was higher ($M = 318.80$) as compare to Baseball players . But calculaed $t = 1.2543$ is statistically not significant at 0.05 level

The finding of the study showed that there was no significant difference obtained on peak expiratory flow rate between selected state level male players. Basketball players demonstrated significantly better than baseball players on peak expiratory flow rate. But it may be due to physique, training and nature of Basketball game .. Hence, the both different games players were not differed significantly on expiratory flow rate .

The finding of the study showed that there was significant difference obtained on peak expiratory flow rate among selected state level male players. Basketball players demonstrated significantly better than baseball players on peak expiratory flow rate. It may be attributed to the fact that the physique, training and nature of Basketball players is different when compared with baseball players. Hence, the both different games were differed significantly.

CONCLUSIONS

In the light of the findings and limitations of the present study, researcher concluded that the Basketball and Baseball players did not differ significantly on peak expiratory flow rate.

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