An Analytical Study on Peak Flow Rate of Football Trainees in Sports Authority of India

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Abstract

The purpose of the study was to compare Peak Flow Rate of football trainees in Sports Authority of India. In this study two hundred eighty football fourteen different players training at training centres and sub centres of Sports Authority of India were selected. Twenty football players with their age ranging between 18-22 years were selected from each Sports Authority of India training centres and sub centres.

To characterize football players by Peak Flow Rate, the Descriptive statistics were used. To examine significant differences in different Sports Authority of India training centres and sub centres of India, Descriptive statistics and Analysis of Variance were calculated with the help of SPSS and was tested at 0.05 level of significance.

The results were analyzed statistically and on the basis of the obtained results from the present study it may be concluded that among different training centres and sub centres of SAI significant differences were observed in the peak flow rate.

Key Words: Peak Flow Rate, Football Trainees, SAI.

1. Introduction:

Football in Sports Authority of India is one of the most valued programs. In football Sports Authority of India cultivate and supports football talents, providing them with necessary coaching facilities, sports equipments, competition exposure and supportive infrastructure in most of the all competitive sports. Trainees are selected in Sports   Authority of India through scouting or selection trails, those having achievements in national or international levels gets some extra bonuses as because of very high standard level, it is a lot and very elevated expected from the trainees. Football is trained mostly in all the centres and sub centres like Kolkata, Guwahati, Bangalore, Patiala, Goa and many other places. Footballers of Sports Authority of India have rich history of producing many national and international level players. Many of the trainees are selected in elite clubs, railways, FCI's, ONGC, forces etc. Footballers regularly participate in different local, national and international level tournaments and championships, which enhances their rich experience to move higher on the stage of being elite and professional players.

2. Materials & Methods:

2.1 Sample of the Study:

The present study was conducted on two hundred eighty football fourteen different players training at training centres and sub centres of Sports Authority of India of India were selected. Twenty football players with their age ranging between 18-22 years were selected from each Sports Authority of India training centres and sub centres.

2.2 Selection of the Variable:

The peak flow rate variable have been selected for purpose of this study.

2.3 Collection of Data:

The data was collected from all the subjects in their respective SAI training centres as mention below:-
  ➢ Kolkata, West Bengal.
  ➢ Burdwan, West Bengal.

  - ➢ Labong, West Bengal.
  - ➢ Siliguri, West Bengal.
  - ➢ Patna, Bihar.
  - ➢ Agartala, Tripura.
  - ➢ Gandhinagar, Gujarat.
  - ➢ Aurangabad, Maharashtra.
  - ➢ Sikkim, Sikkim.
  - ➢ Shillong, Meghalaya.
  - ➢ Dimapur, Nagaland.
  - ➢ Imphal, Manipur.
  - ➢ Guwahati, Assam.
  - ➢ Golaghat, Assam.

2.4 Criterion Measures:

Peak flow rate was recorded to the nearest litre per minute with the help of peak flow meter.

2.5 Administration of the Test:

PEAK FLOW RATE

Equipment: Peak Flow Meter.

Description: peak flow rate of the subject was measured by using a peak flow meter. The measurement was taken of the subject in a standing position. The tester ensured that when the subject held the instrument in his hand ready for blowing the slot placed away from the hand and the flattened part of the plastic mouthpiece was horizontal. The tester also ensured that when the free movement of the marker over the scale. The instrument measured the peak expiratory flow in litres per minute.

The subject was asked to take a deep breath and after that air was blown into mini flow meter with the attached mouthpiece. The subject was asked to blow harder and faster into the mouthpiece. The action was best described as hard huff. Best of the three trials were recorded in litre/min. the mouthpiece was sterilized with rectified spirit after every three trials of each participant.

2.6 Statistical Technique:

To characterize football players by Peak Flow Rate, the Descriptive statistics were used. To examine significant differences in different Sports Authority of India training centres and sub centres of India, Descriptive statistics and Analysis of Variance were calculated with the help of SPSS and was tested at 0.05 level of significance.

3. Results of the Study:

Table 1:
Descriptive Statistics of the Physiological Variable of Peak Flow Rate for Footballers Training at SAI

SAI TRAINING CENTRES	N	MINIMUM	MAXIMUM	MEAN	SD
Kolkata SAI	20	430.00	650.00	512.50	65.84
Burdwan SAI	20	410.00	620.00	503.00	60.00
labong SAI	20	410.00	670.00	504.00	72.64
Siliguri SAI	20	400.00	650.00	514.00	61.93
Patna SAI	20	400.00	670.00	485.50	81.65
Agartala SAI	20	400.00	670.00	507.50	70.02
Gandhinagar SAI	20	340.00	600.00	479.50	65.97
Aurangabad SAI	20	400.00	620.00	469.00	53.59
Sikkim SAI	20	410.00	640.00	503.75	65.39
Shillong SAI	20	400.00	690.00	541.00	77.45
Dimapur SAI	20	470.00	670.00	517.50	52.40
Imphal SAI	20	400.00	690.00	541.00	89.37
Guwahti SAI	20	400.00	640.00	500.50	58.62
Golaghat SAI	20	420.00	650.00	515.00	56.80

[24]

Above table 1 indicates that the mean and SD of SAI football players in their Peak flow rate was Kolkata SAI **512.50±65.84**, Burdwan SAI **503±60**, labong SAI **504±72.64**, Siliguri SAI **514±61.93**, Patna SAI **485.50±81.65**, Agartala SAI **507.50±70.02**, Gandhinagar SAI **479.50±65.97**, Aurangabad SAI **469±53.59**, Sikkim SAI **503.75±65.39**, Shillong SAI **541±77.45**, Dimapur SAI **517.50±52.40**, Imphal SAI **541±89.37**, Guwahti SAI **500.50±58.62**, Golaghat SAI **515±56.80**, respectively.

The Combined depictions of mean scores of all the SAI centres are given in figure: 1.
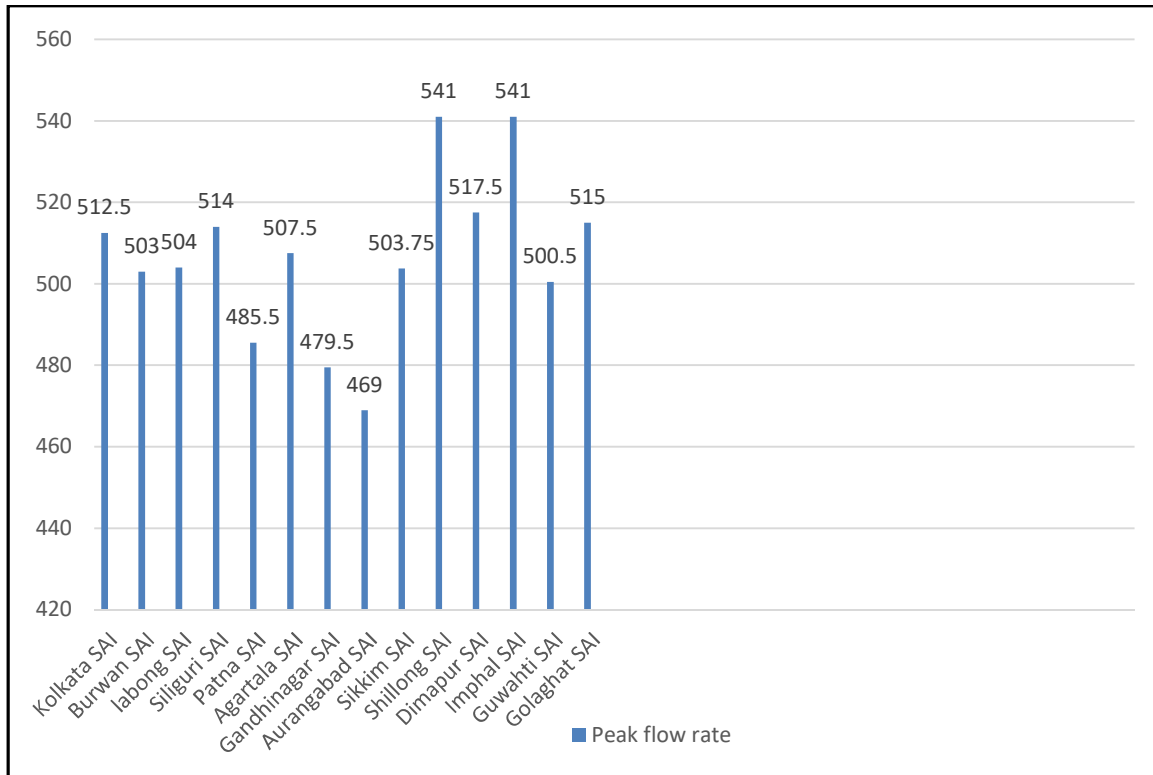(**Means Scores of Peak Flow Rate of Footballers Training at SAI**)

Table 2:
Analysis of Variance of Peak Flow Rate of the Footballers Training at Different SAI Centres

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	106095.446	13	8161.188	1.799	.043
Within Groups	1206873.750	266	4537.119		
Total	1312969.196	279			

The F-value in Table 2 is significant as its p-value is .043 which is less than 0.05. Thus, the null hypothesis of no difference among the means of the different SAI groups may be rejected at 5% level.

Since F-value is significant, post hoc comparisons need to be done. SPSS output shown in Table 3 provides such comparison. It can be seen that the difference between Peak flow rate of Kolkata SAI and Aurangabad SAI is significant as the p-value for this mean difference is .042 which is less than 0.05. Similarly, the mean difference between the Peak flow rate ofSiliguri SAI and Aurangabad SAI .036, Patna SAI and Shillong SAI, Imphal SAI .010, .010, Gandhinagar SAI and Shillong SAI, Imphal SAI .004, .004, Aurangabad SAI and Shillong SAI, Dimapur SAI, Imphal SAI, Golaghat SAI .001, .024, .001, .032arealso significant as the p-value for this difference are also less than 0.05. However, there is no difference between the other SAI as far as Peak flow rate is concerned because the p-value of other SAI is more than 0.05.

Table 3: Post Hoc Mean Comparison of Peak Flow Rate of Footballers Training at Different SAI Centres

(I) SAI Centre	(J) SAI Centre	Mean Difference (I-J)	Std. Error	Sig.
Kolkata SAI	Burdwan SAI	9.50000	21.30051	.656
	labong SAI	8.50000	21.30051	.690
	Siliguri SAI	-1.50000	21.30051	.944
	Patna SAI	27.00000	21.30051	.206
	Agartala SAI	5.00000	21.30051	.815
	Gandhinagar SAI	33.00000	21.30051	.123
	Aurangabad SAI	**43.50000***	21.30051	**.042**
	Sikkim SAI	8.75000	21.30051	.682
	Shillong SAI	-28.50000	21.30051	.182
	Dimapur SAI	-5.00000	21.30051	.815
	Imphal SAI	-28.50000	21.30051	.182
	Guwahti SAI	12.00000	21.30051	.574
	Golaghat SAI	-2.50000	21.30051	.907
Burdwan SAI	labong SAI	-1.00000	21.30051	.963
	Siliguri SAI	-11.00000	21.30051	.606
	Patna SAI	17.50000	21.30051	.412
	Agartala SAI	-4.50000	21.30051	.833
	Gandhinagar SAI	23.50000	21.30051	.271
	Aurangabad SAI	34.00000	21.30051	.112
	Sikkim SAI	-.75000	21.30051	.972
	Shillong SAI	-38.00000	21.30051	.076
	Dimapur SAI	-14.50000	21.30051	.497
	Imphal SAI	-38.00000	21.30051	.076
	Guwahti SAI	2.50000	21.30051	.907
	Golaghat SAI	-12.00000	21.30051	.574
labong SAI	Siliguri SAI	-10.00000	21.30051	.639
	Patna SAI	18.50000	21.30051	.386
	Agartala SAI	-3.50000	21.30051	.870
	Gandhinagar SAI	24.50000	21.30051	.251
	Aurangabad SAI	35.00000	21.30051	.102
	Sikkim SAI	.25000	21.30051	.991
	Shillong SAI	-37.00000	21.30051	.084
	Dimapur SAI	-13.50000	21.30051	.527
	Imphal SAI	-37.00000	21.30051	.084
	Guwahti SAI	3.50000	21.30051	.870
	Golaghat SAI	-11.00000	21.30051	.606
Siliguri SAI	Patna SAI	28.50000	21.30051	.182
	Agartala SAI	6.50000	21.30051	.760
	Gandhinagar SAI	34.50000	21.30051	.106
	Aurangabad SAI	**45.00000***	21.30051	**.036**
	Sikkim SAI	10.25000	21.30051	.631
	Shillong SAI	-27.00000	21.30051	.206
	Dimapur SAI	-3.50000	21.30051	.870
	Imphal SAI	-27.00000	21.30051	.206
	Guwahti SAI	13.50000	21.30051	.527
	Golaghat SAI	-1.00000	21.30051	.963

Patna SAI	Agartala SAI	-22.00000	21.30051	.303
	Gandhinagar SAI	6.00000	21.30051	.778
	Aurangabad SAI	16.50000	21.30051	.439
	Sikkim SAI	-18.25000	21.30051	.392
	Shillong SAI	**-55.50000***	21.30051	**.010**
	Dimapur SAI	-32.00000	21.30051	.134
	Imphal SAI	**-55.50000***	21.30051	**.010**
	Guwahti SAI	-15.00000	21.30051	.482
	Golaghat SAI	-29.50000	21.30051	.167
Agartala SAI	Gandhinagar SAI	28.00000	21.30051	.190
	Aurangabad SAI	38.50000	21.30051	.072
	Sikkim SAI	3.75000	21.30051	.860
	Shillong SAI	-33.50000	21.30051	.117
	Dimapur SAI	-10.00000	21.30051	.639
	Imphal SAI	-33.50000	21.30051	.117
	Guwahti SAI	7.00000	21.30051	.743
	Golaghat SAI	-7.50000	21.30051	.725
Gandhinagar SAI	Aurangabad SAI	10.50000	21.30051	.622
	Sikkim SAI	-24.25000	21.30051	.256
	Shillong SAI	**-61.50000***	21.30051	**.004**
	Dimapur SAI	-38.00000	21.30051	.076
	Imphal SAI	**-61.50000***	21.30051	**.004**
	Guwahti SAI	-21.00000	21.30051	.325
	Golaghat SAI	-35.50000	21.30051	.097
Aurangabad SAI	Sikkim SAI	-34.75000	21.30051	.104
	Shillong SAI	**-72.00000***	21.30051	**.001**
	Dimapur SAI	**-48.50000***	21.30051	**.024**
	Imphal SAI	**-72.00000***	21.30051	**.001**
	Guwahti SAI	-31.50000	21.30051	.140
	Golaghat SAI	**-46.00000***	21.30051	**.032**
Sikkim SAI	Shillong SAI	-37.25000	21.30051	.081
	Dimapur SAI	-13.75000	21.30051	.519
	Imphal SAI	-37.25000	21.30051	.081
	Guwahti SAI	3.25000	21.30051	.879
	Golaghat SAI	-11.25000	21.30051	.598
Shillong SAI	Dimapur SAI	23.50000	21.30051	.271
	Imphal SAI	.00000	21.30051	1.000
	Guwahti SAI	40.50000	21.30051	.058
	Golaghat SAI	26.00000	21.30051	.223
Dimapur SAI	Imphal SAI	-23.50000	21.30051	.271
	Guwahti SAI	17.00000	21.30051	.426
	Golaghat SAI	2.50000	21.30051	.907
Imphal SAI	Guwahti SAI	40.50000	21.30051	.058
	Golaghat SAI	26.00000	21.30051	.223
Guwahti SAI	Golaghat SAI	14.50000	21.30051	.497

*The mean difference is significant at the 0.05 level

4. Discussion:

Significant difference was found in case of peak flow rate of football players trained in training centres and sub centres of different Sports Authority of India. Therefore, proposed hypothesis has been rejected in case of peak flow rate.

The peak flow does not have direct relationship with the kind of training football players are going through. However, the muscles of the heart and its strength may be attributed for the change in individual capacity. It may also be attributed to physiological difference, environmental condition, daily habits, training pattern of football players trained in different centres of Sports Authority of India although there is a study has been conducted by Aswal and Bisht (2017) peak expiratory flow rate.

5. Conclusion:

The results were analyzed statistically and on the basis of the obtained results from the present study it may be concluded that among different training centres and sub centres of SAI significant differences were observed in the peak flow rate.

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