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Physical Education

KEY WORDS: Blood Pressure, Pulse Rate, Vital Capacity, Track and Field Athletes, Football Players and Youths without Sports Background.

COMPARISON OF SELECTED PHYSIOLOGICAL VARIABLES AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND.

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ABSTRACT

The purpose of this study was to find out the differences in selected physiological variables i.e. Pulse Rate, Blood Pressure and Vital Capacity of Track and Field Athletes, Football Players and Youths without Sports Background. The sample of the study was selected through purposive sampling technique. In total 450 subjects became part of the sample, which was divided into three groups. The three groups of the sample were i.e. Track and Field Athletes (N-150), Football Players (N-150) and Youths without Sports Background (N-150). Descriptive statistics and one way ANOVA was employed to interpret the data collected. It was concluded that Football Players significantly differ in all the selected physiological variables in comparison to other two groups.

INTRODUCTION:

Neha and others, (2021) compared selected physiological parameters among the different weight categories of boxers (light, medium and heavy). They found significant differences in anaerobic power index between light and heavy weight categories ($p<0.05$) and in grip strength between light and heavy weight categories ($p<0.05$). Bhim, (2013) found that threr was a significant differences on physiological variables on Sports persons in comparison to Non-Sports persons. Marshall *et al* (1998) assessed physical activity and physiological fitness parameters among six year old children and to determine whether there were any significant gender differences. The result indicated that the differentiation cannot be attributed to gender differences in cardio respiratory fitness and in this culture stereotypic sex preferences in physical activity begin at very young age.

The purpose of the study was to find out the differences in selected physiological variables i.e. Pulse Rate, Blood Pressure and Vital Capacity of Track and Field Athletes, Football Players and Youths without Sports Background

METHODOLOGY:

Sample:

The sample of the study comprised the university and college level players of 18-27 years who had participated in different inter-collegiate and Inter-University level competitions. The sample of the study was selected through purposive sampling technique. In total 450 subjects became part of the sample, which was divided into three groups. The three groups of the sample were i.e. Track and Field Athletes (N-150), Football Players (N-150) and Youths without Sports Background (N-150). The data was collected during the conduct of the various inter-collegiate and Inter-University level competition of the university. In total, the researchers collected the data of from 450 subjects.

Measurement:

Stop Watch, Sphygmomanometer and Stethoscope, and Peak Flow Meter were used to collect the data for Pulse Rate, Blood Pressure and Vital Capacity respectively.

Statistical Analysis:

The significance differences between the means for the Pulse Rate, Blood Pressure and Vital Capacity scores of three groups i.e. Track and Field Athletes, Football Players and Youths without Sports Background were analyzed with the help of one way ANOVA.

Results:

The means and standard deviations were calculated and analysis of variance was applied to find out the significant of difference between groups on the Systolic Blood Pressure, Diastolic Blood Pressure, Pulse Rate and Vital Capacity as presented in table 1 to 8.

TABLE 1: SYSTOLIC BLOOD PRESSURE AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

SOV	TSS	Df	MSS	F VALUE
Between Groups	15952.28	2	7676.14	257.39**
within Groups	13851.71	447	30.9981	
Total	29803.99	449		

***Significant at 0.01 level of confidence (4.66)*

It was revealed from table 1 that there was significant difference in systolic blood pressure among Football Players, Youths without Sports Background and Track and Field Athletes as the calculated value of F (257.39) was more than the tabulated value of F (4.66) required for significant at 0.01 level of confidence.

TABLE 2: COMPARISON OF SYSTOLIC BLOOD PRESSURE AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

Football players	Youths without sports background	T&F Athleats	DM	CD
-----	131.53	119.08	12.83**	1.27
118.70	131.53	-----	13.45**	1.27
118.70	-----	119.08*	00.38	1.27

***Significant at 0.01 level of confidence*

Table 2 shows that the difference in means between Football Players and Youths without Sports Background (13.45) and T & F Athletes and Youths without Sports Background (12.83) were significantly more than the critical difference (1.27) at 0.01 level of significant whereas the difference in means between

Football Players and T & F Athletes (0.38) was found insignificant. It shows that Youths without Sports Background possessed the more systolic blood pressure than two of the Football Players and T & F Athletes Football Players and T & F Athletes had similar systolic blood pressure.

Table 3: DIASTOLIC BLOOD PRESSURE AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

SOV	TSS	Df	MSS	F VALUE
Between Groups	15877.67	2	7938.842	370.8357
within Groups	9569.34	447	21.40792	
Total	25447.02	449		

***Significant at 0.01 level (4.66)*

It was revealed from the table 3 that the F-value (370.8357) for the variable of Diastolic Blood Pressure among Football Players, Youths without Sports Background and T & F Athletes was more than the tabulated value of F (4.66) and hence there is a significant at 0.01 level of confidence exists.

Table 4: COMPARISON OF DIASTOLIC BLOOD PRESSURE TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

Football players	Youths without sports background	T&F Athleats	DM	CD
-----	88.55	76.03	12.42**	1.05
75.77	88.55	-----	12.78**	1.05
75.77	-----	76.03	00.66	1.05

***Significant at 0.01 level of confidence*

Table 4 revealed that the difference in means between Youths without Sports Background and T & F Athletes (12.42) and Youths without Sports Background and Football Players (12.78) exists at 0.01 level of confidence as the differences between the means were more than the critical difference (1.05) at 0.01 level of confidence, whereas the difference in means between Football Players and T & F Athletes (0.66) was less than the critical difference and no significant difference exist between them.

Table 5: PULSE RATE AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

SOV	TSS	Df	MSS	F VALUE
Between Groups	14208.69	2	7104.35	468.02
within Groups	6785.31	447	15.18	
Total	20994	449		

***Significant at 0.01 level (4.66)*

It was found from the table 5 that the F-value (468.02) for the variable of pulse rate among Football Players, Youths without Sports Background and T & F Athletes was significant at 0.01 level of confidence as the obtained value of F (468.02) was more than the tabulated value of F (4.66).

Table 6: COMPARISON OF PULSE RATE AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

Football players	Youths without sports background	T&F Athleats	DM	CD
-----	80.20	68.28	11.82**	00.89
68.31	80.20	-----	11.92**	00.89
68.31	-----	68.28	00.03	00.89

***Significant at 0.01 level of confidence*

Table 6 clearly shows that the significant difference in means in pulse rate between Youths without Sports Background and T & F Athletes (11.92) & between Youths without Sports Background & Football Players (11.89) exist as there were more than the critical difference (0.89) at 0.01 level of confidence, whereas the difference in means between Football Players and T & F Athletes (00.03) was less than the critical difference. Hence it suggests that Youths without Sports Background had more pulse rate than those of Football Players and T & F Athletes, whereas Football Players and T & F Athletes had similar number of pulse rate.

Table 7: VITAL CAPACITY AMONG TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

SOV	TSS	Df	MSS	F VALUE
Between Groups	3485329	2	1742665	498.12**
within Groups	1563823	447	3498.49	
Total	5049152	449		

***Significant at 0.01 level (4.66)*

It was revealed from the table 7 that the F-value (498.12) for the variable of Vital Capacity among Football Players, Youths without Sports Background and T & F Athletes was significant at 0.01 level of confidence as the computed value of F (498.12) was more than the tabulated value of F (4.66).

Table 8: COMPARISON OF TRACK AND FIELD ATHLETES, FOOTBALL PLAYERS AND YOUTHS WITHOUT SPORTS BACKGROUND

Football players	Youths without sports background	T&F Athleats	DM	CD
-----	377.93	577.27	179.24**	13.45
571.2	377.93	-----	193.27**	13.45
571.2	-----	577.27	013.93**	13.45

***Significant at 0.01 level of confidence*

From Table 4 it was observed that the differences in means of vital capacity between Youths without Sports Background and T & F Athletes (179.24), differences in means between Football Players and Youths without Sports Background (193.27) and Football players and T & F Athletes (013.93) were more than the critical difference(13.45) at 0.01 level of confidence . Hence it was found that Football Players had more vital capacity than those of T & F Athletes and Youths without Sports Background but Youths without Sports Background had the least.

FINDINGS

1. Youths without Sports Background possessed the more systolic blood pressure than Football Players and T & F Athletes whereas Football Players and T & F Athletes had similar systolic blood pressure.
2. Youths without Sports Background had more diastolic blood pressure than those of the T & F Athletes and Football Players.
3. Youths without Sports Background group have more pulse rate than those of Football Players and T & F Athletes, whereas Football Players and T & F Athletes had similar number of pulse rate.
4. Football Players had more vital capacity than those of T & F Athletes and Youths without Sports Background but Youths without Sports Background had the least.

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