



Comparison of Selected Physiological Variables Among Sports Persons, Yoga Practitioners And Non-Practitioners.

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ABSTRACT

The purpose of this study was to find out the difference in selected physiological variables i.e. Pulse Rate, Blood Pressure and Vital Capacity of Yoga practitioners, Non-practitioners and Sports persons. 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. Yoga Practitioners (N-150), Non-Practitioners (N-150) and Sports Persons (N-150). Descriptive statistics and one way ANOVA was employed to interpret the data collected. It was concluded there was yogic practitioner group significantly differ in all the selected physiological variables in comparison to other two groups.

KEYWORDS : Blood Pressure, Pulse Rate, Vital Capacity, Yoga Practitioner, Non-Practitioner, Sports Persons

Introduction:

Physical fitness determines efficiency. Physical fitness means energetically performing daily tasks to the best of one's ability without getting exhausted. Physical activity decrease risk factors linked with coronary heart disease; helps to improve ability to exercise and do physical work; increase enthusiasm and foster a sense of well-being; release tension and helps in relaxation and sleep; helps to control weight; and encourage positive changes in other lifestyle habits. Being fit has many advantages, from helping you to control your weight to give a better sleep in nights. There is impressive evidence that people who exercise frequently, and in the correct way, are less prone to heart attacks, strokes and other life-threatening conditions, and live longer than people whose existence is sedentary. One cannot, however, build up a store of fitness that will last for life. One needs to exercise regularly through out the life. Good endurance also ensures high quality or skill movement of execution, which finds expression in accuracy, precision, rhythm, consistency etc. under fatigue condition. Endurance i.e. directly or intricately has high importance in all sports. It is primarily determined by energy liberation processes. Successful performance in endurance training depends on many physiological, biomechanical, psychological and nature factors. The ability to main pace or tempo of an exercise or during competition is impossible without the requisite level of endurance training which results in improvement of functioning of various organs and systems of human body. Thus, in order to develop, improve and stabilize the endurance level of players, a well-planned endurance training programmed should be formulated. Out of others physiological variables vital capacity is also a component which play important role in the performance of the players. Vital capacity is the maximum volume of air that a person can exhale after maximum inhalation. It can also be the maximum volume of air that a person can inhale after maximum exhalation. A person's vital capacity can be measured by a Spiro meter which can be a wet or regular Spiro meter. In combination with other Physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. The unit that is used to determine this vital capacity is liters. Vital capacity is the maximum amount of air a person can expel from the lungs after first filling the lungs to their maximum extent and then expiring to the maximum extent (about 4600 milliliters). It equals the aspiratory reserve volume plus the tidal volume plus the expiratory reserve volume. Vital capacity of the player is totally depending on the proper supply of oxygenated blood to each and every organ of the body and this supply depends on the blood pressure.

Sallies *et al.*¹ studied the relationship between habitual physical activity and components of health-related physical fitness in 274 boys and 254 girls. The physical actively index was significantly associated with the mile run, skin fold tests, pull-ups, sit-ups and sit-an-reach test. They concluded that the active children appear to engage in a sufficient variety of activities to enhance multiple components of health relationship fitness. Marshall *et al.*² 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 social, environmental and possibly psychological parameters involved, have implications for health education and physical education instructors in the appropriate targeting of physical activity promotion programs among young children. 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 Yoga practitioners, Non-practitioners and Sports persons.

J. F.Sallis, T. L.McKenzie, and J. E. Alcaraz, Habitual Physical Activity and Health-Related Physical Fitness in Fourth-Grade Children. *Am. J. Dis. Child.*, (1993).

S.J. Marshall, J.A. Sarkin, J.F. Sallis, and T.L.McKenzie, Tracking of Health Related Fitness Components in Youth Ages 9 To 12, *Med Sci. Sports Exerc.*; 1998.

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. Yoga Practitioners (N-150), Non-Practitioners (N-150) and Sports Persons (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 researcher collected the data of from 450 subjects. The sub samples collected were equal in all the three groups i.e. Yoga Practitioners

(N-Non-Practitioners (N-150) and Sports Persons (N-150). Before the e data, the consent of the various practitioners was taken.

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 of the difference between the means for the Pulse Rate, Blood Pressure and Vital Capacity scores of three groups i.e. Yoga Practitioners, Non-Practitioners and Sports Persons 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 YOGIC PRACTITIONERS, NON- PRACTITIONERS AND SPORTSPERSONS

SOV	TSS	Df	MSS	F Value
Between Groups	15952.28	2	7976.14	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 yogic practitioners, non- practitioners and sports persons 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 YOGIC PRACTITIONERS NON- PRACTITIONERS AND SPORTSPERSONS

Yogic Practitioners	Non-practitioners	Sport women	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 yogic practitioners and non practitioners (13.45) and sports persons and non - practitioners (12.83) were significantly more than the critical difference (1.27) at 0.01 level of significant whereas the difference in means between yogic practitioners and sportsmen (0.38) was found insignificant. It shows that the non- practitioners possessed the more systolic blood pressure than two of the yogic practitioners and sports 144 persons but yogic practitioners and sportsmen had similar systolic blood pressure.

Table 3
DIASTOLIC BLOOD PRESSURE AMONG YOGIC PRACTITIONERS, NON- PRACTITIONERS AND SPORTSPERSONS

SOV	TSS	Df	MSS	F Value
Between Groups	15877.68	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 yogic practitioners, non-practitioners and sports persons was more than the tabulated value of F(4.66) and hence there is a significant at 0.01 level of confidence exist.

Table 4
COMPARISON OF DIASTOLIC BLOOD PRESSURE AMONG

YOGIC PRACTITIONERS NON- PRACTITIONERS AND SPORTSPERSONS

Yogic Practitioners	Non- practitioners	Sport women	DM	CD
-----	88.55	76.13	12.42**	1.05
75.77	88.55	-----	12.78**	1.05
75.77	-----	76.13	00.66	1.05

**Significant at 0.01 level of confidence

Table 4.1.54 revealed that the difference in means between non-practitioners and sportspersons (12.42) and non practitioners and yogic practitioners (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 yogic practitioners and sportsperson (0.66) was less than the critical difference and no significant difference exist between them.

Table 5
PULSE RATE AMONG YOGIC PRACTITIONERS, NON- PRACTITIONERS AND SPORTSPERSONS

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 yogic practitioners, non- practitioners and sports person 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 YOGIC PRACTITIONERS NON- PRACTITIONERS AND SPORTSPERSONS

Yogic Practitioners	Non-practitioners	Sport women	DM	CD
-----	80.20	68.28	11.92**	0.89
68.31	80.20	-----	11.89**	0.89
68.31	-----	68.28	00.03	0.89

**Significant at 0.01 level of confidence

Table 6 clearly shows that the significant difference in means in pulse rate between non- practitioners and sports-persons (11.92) & between non- practitioners & yogic practitioners (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 yogic practitioners and sports persons (00.33) was less than the critical difference. Hence it suggests that non- practitioners group had more pulse rate than those of yogic practitioners and sportspersons, whereas yogic practitioners and sports persons had similar number of pulse rate.

Table 7
VITAL CAPACITY AMONG YOGIC PRACTITIONERS, NON- PRACTITIONERS AND SPORTSPERSONS

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 yogic practitioners, non- practitioners and sportspersons was significant at 0.01 level of confidence as the required value of F (498.12) was more than the tabulated value of F (4.66).

