



COMPARISON OF PHYSIOLOGICAL & PHYSICAL FITNESS COMPONENT OF BADMINTON AND TABLE TENNIS PLAYERS

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Abstract : The purpose of this research was to determine the circadian fluctuations in chosen physical fitness components such as agility, flexibility, strength, and physiological variables (blood pressure, heart rate, and exhale capacity) at S.G.B. Amravati University in Amravati (MS). Total Sixty (60) subjects were selected for this study. subjects were selected from Inter University level Thirty (30) Table Tennis players & thirty (30) were selected from Badminton Players in S. G. B. Amravati University, Amravati (MS). The objective of this study to find out the circadian influence on selected Physiological & Physical Fitness Component. The subjects were carefully chosen by using random sampling. In the beginning it was hypothesized that there will be a significant difference of circadian variations in the selected physical fitness components and physiological variables of Table Tennis and Badminton game player. The study shows notable differences in physical and physiological traits among Agility, Flexibility, and Strength among players. However, there's no significant distinction in Blood Pressure, Pulse Rate, and Exhale Capacity between Table Tennis and Badminton players. Agility and Flexibility exhibit significant differences, confirming the researcher's hypothesis partially.

Key Words: Agility, Strength, Flexibility, Blood Pressure, Pulse Rate and Exhale Capacity Variables of Table Tennis and Badminton Players.

I. INTRODUCTION:-

The ability to performance daily task vigorously and clearly, with energy remaining for enjoying leisure time activities in addition to meeting emergency demands. It was the capability to tolerate, to endure up, to with stand pressure, to carry on in situation where an unhealthy individual could not carry on and was a major basic for good wellbeing and happiness. Agility was the capability to change direction rapidly and accurately and to control body movements. The range of possible movement at the joint was called as flexibility. The ability of muscle to overcome resistance. A healthy individual is one who is free from constraining and debilitating illnesses, who has the stamina and skill to do a day's work, and who has sufficient energy not only to meet emergencies, but also to take part in leisure activities. Sports physiology is derived from exercise physiology. It uses the notion of exercise physiology to train the badminton and improve its athletic performance. Since competitions are organised on a greater scale than ever before, the sum sets at a place at a certain time this may rise at another place, additionally due to physiological factors and time differences the Badminton the same time at another site. It is well known that the individual performance in any sports events follows circadian physiological constraints. The amount of air that can be expired from the lung after maximum inspiration was called as exhale capacity of lungs. (Raut, 2011) conducted the study on "Comparative Study of Biorhythms with Various Physical Fitness Components". The aim of the study was to find out which physical fitness components dominant in a specific time of a day. To achieve this purpose, twenty students from S. G. B. Amravati University, Amravati were randomly selected.

Circadian fluctuations are inherent sequences which control memory, ambition, synchronization endurance, temperament, emotions, and much more, we each have three fundamental circadian fluctuations cycles. Each cycle has a particular function, and particular life cycle. This might be a terrible day. Triple transition days are extremely unusual, occurring just once every 7-8 years. The selected male individuals varied in age from 22 to 28 years. Only three of the physical fitness factors were chosen: muscular strength, speed, and flexibility. These three fitness components differ in nature. To determine the fitness components for muscular strength (abdominal), a bend knee sit-ups test was performed, a 50 yard sprint was performed, and flexibility was tested simultaneously by a stand and bend test.

II. METHODOLOGY:-

Source of Data: For the present study the source of subjects were selected from Physical fitness and physiological parameters, in Amravati city.

Selection of the Subject: Sixty (60) subjects were selected for the study. Thirty (30) subjects were taken from Table Tennis game players, while the remaining Thirty (30) were taken from Badminton game Players in S. G. B. Amravati University, Amravati.

Sampling Methods: The subjects were selected by using simple random sampling method.

Administration of test: The testing of all selected parameters was done on the Players of S. G. B. Amravati University, Amravati

Test	Equipment
Agility: To measure the speed of body movements.	Two Wooden Blocks, Rope, Lime Powder, Measuring Tape And Stopwatch.
Flexibility: To measure range of joints.	Goniometer, Changing Room Or Private Room, Pen & Paper
Strength: To measure the strength of the hand grip.	Grip Dynamometer , Pen Paper
Exhale Capacity: To measure Exhale Capacity	Peak Flow Meter,
Blood Pressure: To measure the Blood Pressure.	Electronic Blood Pressure Machine
Pulse Rate: To count the Heart Rate or beats per minute	Equipment: Smart Band With Hearth Rate Monitor

III. STATISTICAL ANALYSIS:-

The analysis of data collected on selected physical fitness components namely agility, flexibility, strength (Grip) and physiological variables namely blood pressure, pulse rate and exhale capacity during different times of day have been described in this paper. The objective of this study was to find out the circadian influence on selected Physiological & Physical Fitness Component. The data pertaining to each of the selected Physiological & Physical Fitness Component were examined by the special statistical techniques viz. mean, standard deviation and 't' test.

Table No. 1: Comparison of Mean Value of Agility, Flexibility and Strength of Table Tennis and Badminton Player

Test		Mean	S.D.	M.D.	S.E.	D.F.	O.T.	T.T
Agility	Table Tennis	7.016	0.48	0.14	0.085	58	1.72	2.02
	Badminton	6.86	0.42					
Flexibility	Table Tennis	62	3.48	7.033	0.88		7.96	
	Badminton	54.96	2.61					
Strength	Table Tennis	43	4.16	1.66	1.096		1.52	
	Badminton	41.33	2.83					

Level of significance = 0.05

Table no. 1 reveals that there was no significant difference in Endurance of Table Tennis and Badminton Players in Amravati University. Because mean of Table Tennis players was 7.016, 62 and 43 which was less than the mean of Badminton Players 6.86, 54.96 and 41.33. To check the significant difference between Table Tennis and Badminton Players the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between Table Tennis and Badminton Players which was 0.48/0.42, 3.48/2.61 and 4.16/2.83 respectively and the calculated value of 't' was found as 1.72, 7.96 and 1.52 only flexibility was greater than the tabulated 't' which was 2.02 at 0.05 level of significance.

Graph 1 : Graphical Representation of Mean Difference of Agility, Flexibility and Strength of Table Tennis and Badminton Players

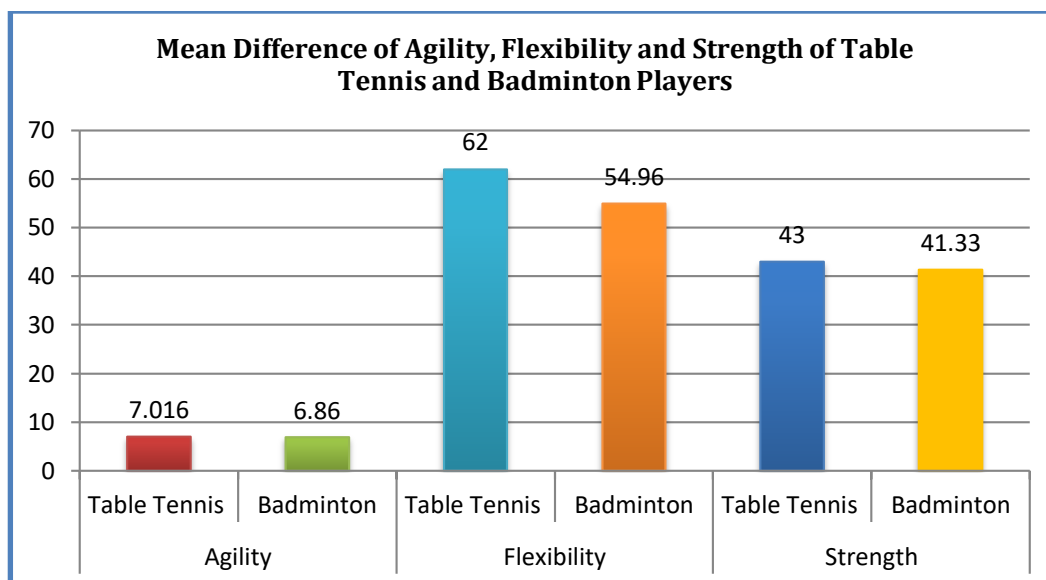


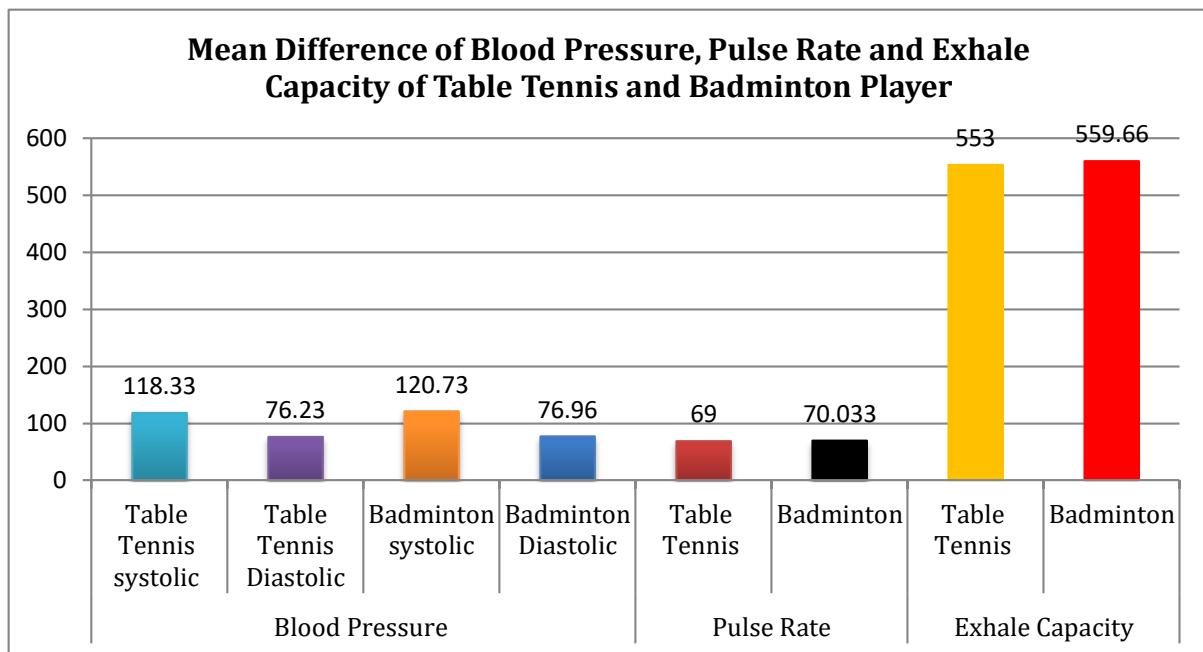
Table No. 2: Comparison of Mean Value of Blood Pressure, Pulse Rate and Exhale Capacity of Table Tennis and Badminton Player

Test		Mean	S.D.	M.D.	S.E.	D.F.	O.T.	T.T
Blood Pressure	Table Tennis systolic	118.33	6.47	2.4	2.67	58	0.89	2.02
	Table Tennis Diastolic	76.23	6.70					
	Badminton systolic	120.73	3.71	0.73	1.30		0.56	
	Badminton Diastolic	76.96	4.33					
Pulse Rate	Table Tennis	69	1.72	1.033	0.42		2.43	
	Badminton	70.033	1.80					
Exhale Capacity	Table Tennis	553	45.94	6.66	66.89		0.099	
	Badminton	559.66	41.89					

Level of significance = 0.05

Table no. 2 reveals that there was no significant difference in Endurance Table Tennis and Badminton Players in Amravati University. Because mean of Table Tennis players was 118.33/76.23, 69 and 553, which was less than the mean of Badminton Players 120.73/76.96, 70.033 and 559.66. To check the significant difference between Table Tennis and Badminton Players the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between Table Tennis and Badminton Players which was 6.47/6.70(S/D), 3.71/4.33(S/D) , 1.72/1.80 and 45.94/41.89 respectively and the calculated value of 't' was found as 0.89/0.56(S/D), 2.43 and 0.099 only pulse rate was greater than the tabulated 't' which was 2.02 at 0.05 level of significance.

Graph 2 : Graphical Representation of Mean Difference of Blood Pressure, Pulse Rate and Exhale Capacity of Table Tennis and Badminton Player



IV. Discussion of Hypothesis:

In the beginning it was hypothesized that there will be a significant difference of circadian variations in the selected physical fitness components and physiological variables of Table Tennis and Badminton game players in S. G. B. Amravati University, Amravati. The result of the study shows that there is significant difference in Agility, Trunk Flexibility, Grip Strength and Exhale Capacity. The study also shows that there is no significant difference in circadian variation of Blood Pressure and Pulse Rate.

V. CONCLUSION:

The researcher compared Table Tennis and Badminton Players, within the limitations of the present study and on the basis of findings it is concluded that there is significant difference in physical and Physiological Variables between the Agility, Flexibility, and Strength and insignificant difference between Blood Pressure, Pulse Rate, Exhale Capacity of Table Tennis and Badminton players. The researcher compared the particular Physiological & Physical Fitness Component during the particular Events; it is found that there is also significant result in Agility and Flexibility, insignificant difference in between Blood Pressure, Pulse Rate and Exhale Capacity. Hence the researcher's pre assumed hypothesis is partially accepted.

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