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Effectiveness of Physical Training Programme on Physiological Efficiency on Sedentary Students

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ABSTRACT
Day by day the importance of young population is being highlighted through many platforms, by international organizations, politicians and scientists. According to the statistics of world health organization, the deficiency of physical activities of adults are approximately at 17% (Berggren, 2005); Angilley and Haggas, 2009) in the world. In the developed countries 10 to 15% of young population do sports (Yitzhak; 2009), the percentage decrease in the developing and undeveloped ones. Participation to physical activities is rapidly decreased specially in the college and university education. Academic education in the universities focuses on the specialization in preferred fields. Physical fitness has an important role in the education of new generation in the frame of physical and mental health and now a day it is treated as a piece of education in the developed societies and education programmes. The study regarding the physical fitness programmes can be placed in a special order in the subject of physical education, Sports sciences and medical sciences. In this context, fitness program applications that are covered by the study to find out physiological efficacy on sedentary students.
Kewywords: Physical Training, Effectiveness, Sedentary students, Physiological Efficiency

Introduction

Whether an individual is associated with lifestyle diseases or not, Physical education training is important components of a healthy lifestyle. There are many benefits of fitness: a better functioning of cardio vascular system and an improved sense of psychological well- being. The physical fitness related benefits are especially important for people associated with lifestyle disorders who are at greater risk of coronary artery diseases, arteriosclerosis, cerebral vascular disease, renal diseases, ocular disease and other health problems (Armstrong 1991, Maynard 1991). Various authors (Horton's Es 1998, Armstrong 1991 and Maynard1991) have reported that regular exercise has improved the cardio vascular system, decreased some of the risk factors leading to a cardiovascular disease, promoted fat loss, increased muscle mass, increased glucose intake by cells and enhanced well- being of the sedentary students. In another research (Jackson J et.al. 1968, Clausen J P 1997) physical fitness will be noted to improve cardiovascular fitness and work capacity, while decreasing resting and exercise blood pressure, as well as peripheral vascular resistance. Finally, physical fitness has been shown to decrease the risk of cardiovascular disease and improve total cholesterol and high-density lipoprotein levels (Milesis et. al. 1976). Exercise also means total caloric expenditure promotes fat loss, and increases lean body mass (Horton's Es 1998, Maynard 1991)

The study regarding the physical fitness programmes can be placed in a special order in the subject of physical education, Sports sciences and medical sciences. In this context, fitness program applications that are covered by the study in the field of physical education departments have an important role. Therefore, this study endeavours to examine the effects of Physical education training programmes.

Sample size and Sampling Method

Only one group was targeted experimental group, there was no control group. The 75 male sedentary students from different colleges in Marathwada region of Maharashtra participated in the study and their age ranged between 21-30years.Training was given to the experimental groups. The sampling method of the study is purposive sample.

Inclusion and exclusion criteria

The inclusion and exclusion criteria for participants were as follows:
The inclusion criteria are:

1. The participant agreed to participate in the study via an informed consent.

2. The participants must be sedentary student in their under and post graduate degree programme aged range was 22 to 30 years.
3. The participants were not rotating through other health facility at the time of study.

The exclusion criteria are:

1. Active Physical illness. The participants advised not to participate if under any injuries and management within 2 weeks of study.
2. Inability to obtain the consent of the respondent.
3. Presence of chronic medical conditions such as asthma, heart disease or any other condition. And
4. Participants free from the smoking, drug abuse and alcohol consumptions during the experimental period

2. Research design

The research design refers to "the researcher's overall plan for testing the research hypotheses.This study involves a cross sectional, comparative pre and post-test of two groups of students in an experimental research. Since only experimental group will be taken by the investigator and there will be no control group so this study will be conducted in a quasi-experimental design. This explores and measures the cardiovascular efficiency body composition and health outcome within the environment and culture.

Selection of variables

1. **Physiological variables**

The following physiological variables was selected as follows

i) Resting Heart Rate
ii) Breath Holding Capacity (after inspiration)
iii) Breath Holding Capacity (after expiration)
iv) Blood Pressure
v) Body Mass Index

Administration of The Test

Physiological Test:

Pre and post physiological test were taken by the following procedure.

a. Resting heart rate

Resting heart rate of each subject was recorded before & after training. Before recording Resting heart rate the subject was instructed to remain lying on their bed to record the heart rate, Heart rate was recorded by the palpation at redial artery per minute. The score was express in number of heart rate per minute

b. Blood pressure

The blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the heart muscle. Sphygnometer was used to measure Blood pressure

c. Breath holding capacity (after inspiration)

The breath holding capacity after inspiration was recorded before & after training. Before recording breath holding capacity after inspiration the students were instructed to stand erect with leg bended, after getting signal the student inhale air through his nostrils. Then the nose was locked or closed with nose clip. The total time of air holding capacity after inspiration of the students was measured in seconds.

d. Breath holding capacity (after expiration)

The breath holding capacity after expiration was recorded before & after training. Before recording breath holding capacity after expiration the students were instructed to stand erect with leg bended, after getting signal the student exhale air through his nostrils. Then the nose was locked or closed with nose clip. The total time of air holding capacity after inspiration of the students was measured in seconds.

e. Body Mass Index:

Body Mass Index was measured by individual's body mass divided by the square of his height.

Statistical Analysis

The obtained data was in Pre & Post form therefore to analyze the obtained data Mean, Standard Deviation and T-test was utilized by the investigator. The level of significant was set up at 0.05 level.

Interpretation of Data And Results of The Study

Table 1
Mean score standard deviation and t-ratio of Heart rate in pre and post-test of Sedentary students

Variable	Test	Number	Mean	S.D.	t-ratio
Heart Rate	Pre Test	75	76.78	6.10	**3.11***
	Post Test	75	73.76	5.84	

**** Significant at .05 level. , P<.051***

As per Table -1 Shows that Statically Significant difference of mean scores, standard deviation and t-ratio of heart rate of pre and post-test of sedentary students.

With regards to selected physiological variable in heart rate of pre and post-test of Experimental group they have obtain the mean value of **76.78** and **73.76** respectively which are given in the Table -1 reveals that there was significant effects of physical education training programme was found in heart rate(**t=**,p<.05). That means physical education training programme is beneficial for reducing the heart rate among sedentary students. Thus the hypothesis of the study was accepted.

The Mean score and standard deviation of Heart rate in pre and post-test of Sedentary students has been presemted graphically through figure-1

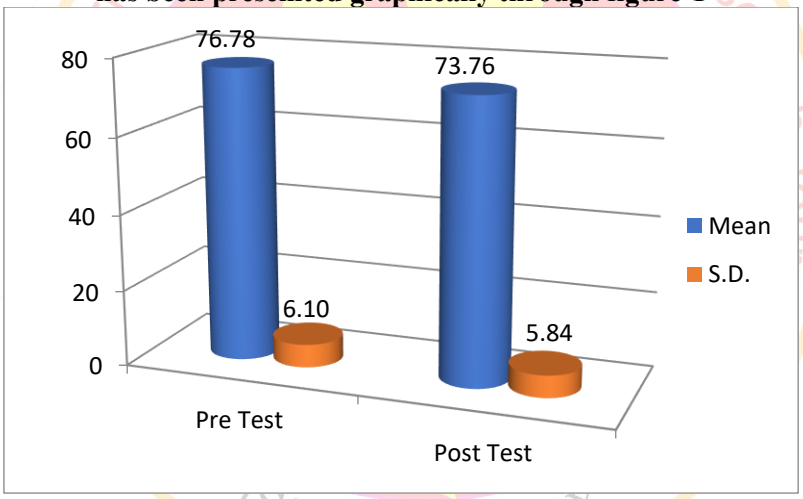


Figure -1 The Mean score and standard deviation of Heart rate in pre and post-test of Sedentary students

Table 2
Mean score standard deviation and t-ratio of breath holding capacity (inspiration) in pre and post-test of sedentary students.

Variable	Test	Number	Mean	S.D.	t-ratio
B. H. C. Inspiration	Pre Test	75	36.40	4.32	9.74 *
	Post Test	75	44.39	5.64	

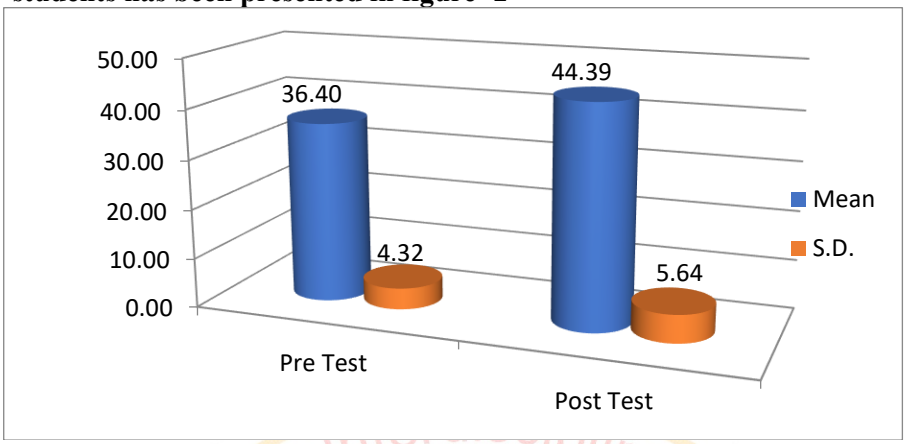
**** Significant at .05 level. (t=2.41), P<.05***

Table- 2 Shows that mean scores, standard deviation and t-ratio of breath holding capacity (inspiration) in pre and post-test of sedentary students .

With regards to selected physiological variable in Breathing holding capacity (inspiration) in pre and post-test of Experimental group they have obtain the mean value of 36.40 and 44.39

respectively which are given in the Table -2 shows that significant effects of physical education training programme was found in **breath holding capacity.**

Mean score and standard deviation of breath holding capacity (inspiration) in pre and post-test of sedentary students has been presented in figure -2



Mean score and standard deviation of breath holding capacity (inspiration) in pre and post-test of sedentary students has been presented in figure -2

Table 3
Mean score standard deviation and t-ratio of breath holding capacity (expiration) in pre and post-test of sedentary students.

Variable	Test	Number	Mean	S.D.	t-ratio
B. H. C. Expiration	Pre Test	75	29.00	4.90	**6.45***
	Post Test	75	34.55	5.67	

**** Significant at .05 level. , P<.05***

Table- 3, Shows that mean scores, standard deviation and t-ratio of breathing holding capacity (expiration) in pre and post-test of sedentary students.

With regards to selected physiological variable in Breathing holding capacity (expiration) in pre and post-test of Experimental group they have obtain the mean value of 29.00and 34.55 respectively which are given in the Table -3 shows that significant effects of physical education training programme was found in Breathing holding capacity (expiration).

Mean score and standard deviation of breath holding capacity (expiration) in pre and post-test of sedentary students has been presented in figure -3

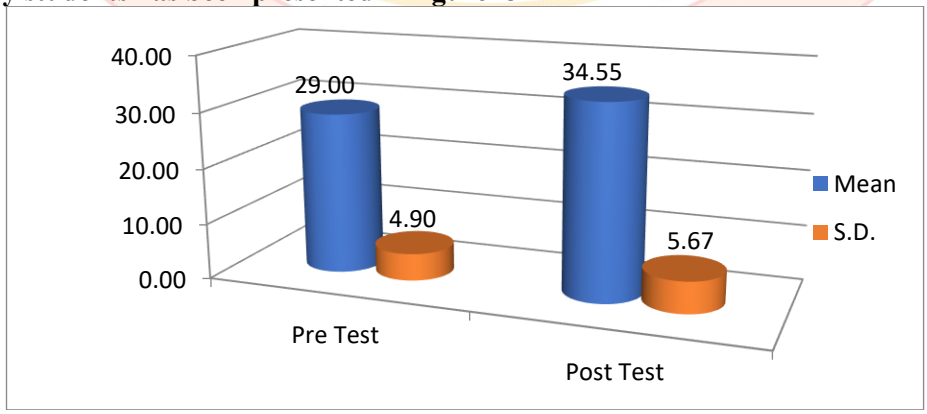


Figure -3 shows the Mean score and standard deviation of breath holding capacity (expiration) in pre and post-test of sedentary students.

Table 4
Mean score standard deviation and t-ratio of Blood Pressure (Diastolic) in pre and post-test of sedentary students.

Variable	Test	Number	Mean	S.D.	t-ratio
B. P. (Diastolic)	Pre Test	75	85.44	9.33	2.83*
	Post Test	75	81.22	8.97	

**** Significant at .05 level. , P<.05***

Table- 4, Shows that mean scores, standard deviation and t-ratio of Diastolic Blood pressure in pre and post-test of sedentary students.

With regards to selected physiological variable in Diastolic Blood pressure in pre and post-test of Experimental group, they have obtained the mean value of 85.44and 81.22 respectively which are given in the Table -4 shows that significant effects of physical education training programme was found in Diastolic Blood pressure of Sedentary students.

Mean score and standard deviation of Blood Pressure (Diastolic) in pre and post-test of sedentary students has been presented in figure-4

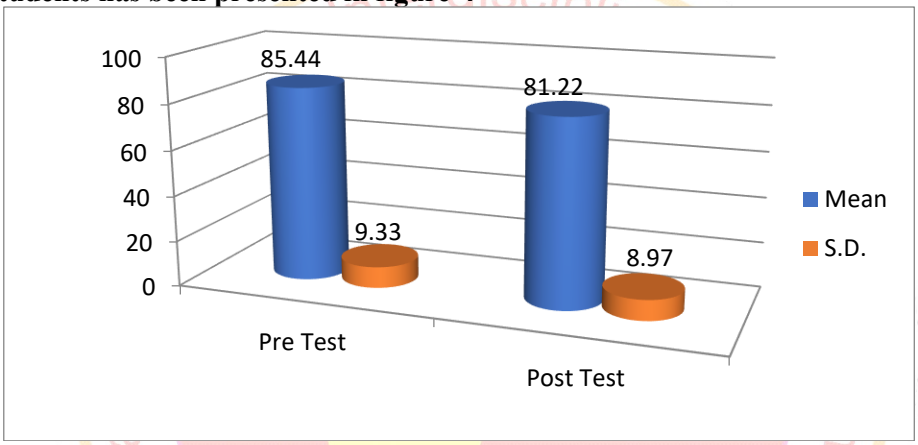


Figure-4 shows the Mean score and standard deviation of Blood Pressure (Diastolic) in pre and post-test of sedentary students.

Table 5
Mean score standard deviation and t-ratio of Blood Pressure (systolic) in pre and post-test of sedentary students.

Variable	Test	Number	Mean	S.D.	t-ratio
B. P. systolic	Pre Test	75	125.45	14.31	1.46NS
	Post Test	75	122.10	13.80	

NS= Not Significant

Table- 5, Shows that **Mean score standard deviation and t-ratio of Blood Pressure (systolic) in pre and post-test of sedentary students**.

With regards to selected physiological variable in B.P Systolic in pre and post-test of Experimental group they have obtain the mean value of 125.45 and 122.10 respectively which are given in the Table -5 shows that insignificant effects of physical education training programme was found in systolic Blood pressure of sedentary students.

The Mean score and standard deviation of Blood Pressure (systolic) in pre and post-test of sedentary students have been presented in figure-5.

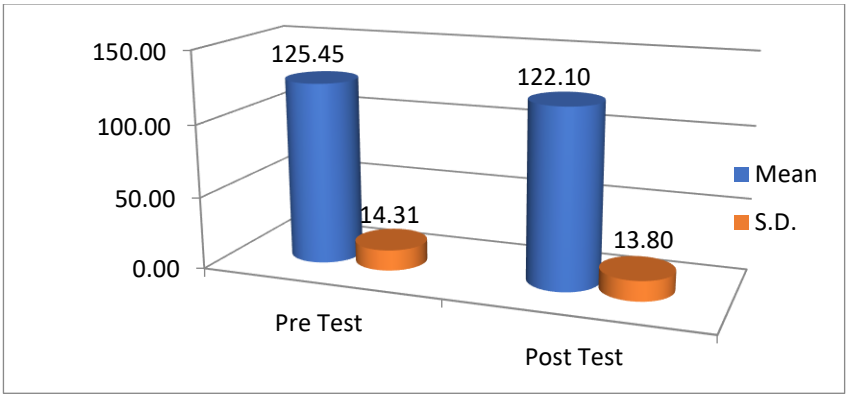


Figure-5 the Mean score and standard deviation of Blood Pressure (systolic) in pre and post-test of sedentary students.

Table 6
Mean score standard deviation and t-ratio of BMI in pre and post-test of sedentary students.

Variable	Test	Number	Mean	S.D.	t-ratio
BMI	Pre Test	75	23.42	5.67	2.53*
	Post Test	75	21.16	5.23	

NS = *Significant at .05 level. P<.05*

Table- 6 shows that **Mean score standard deviation and t-ratio of BMI in pre and post-test of sedentary students.**

With regards to selected physiological variable in Body mass Index in pre and post-test of Experimental group they have obtain the mean value of 23.42and 21.16 respectively which are given in the Table -6 shows that significant effects of physical education training programme was found in Body mass Index of sedentary students.

Mean score and standard deviation of BMI in pre and post-test of sedentary students have been presented in figure-6

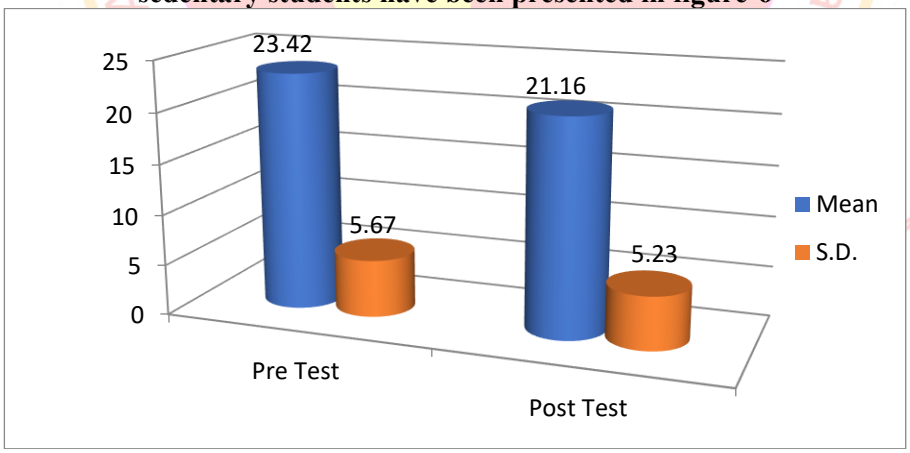


Figure-6 shows Mean score and standard deviation of BMI in pre and post-test of sedentary students.

Conclusions

1. There were significant effects of physical education training programme was found in heart rate.
2. Significant effects of physical education training programme were found in **breath holding capacity.**
3. Significant effects of physical education training programme were found in Breathing holding capacity (expiration).

4. Significant effects of physical education training programme were found in Diastolic Blood pressure of Sedentary students.
5. Insignificant effects of physical education training programme were found in systolic Blood pressure of sedentary students.
6. Significant effects of physical education training programme were found in Body mass Index of sedentary students.

Recommendations:

Research in any field of knowledge not completed in itself. There is always need of findings new problems related to previous researches and finding out solution. In the light of result and discussion of this study following recommendation are made for further research in this area.

1. A similar study could be done on female sedentary students of different Colleges and Universities.
2. A similar study could be done on different age group sedentary students of different Colleges and Universities.
3. A similar study could be done on different area sedentary peoples.
4. Further study could be conducted taking into consideration sex difference, Experience and age difference.
5. Study could be conducted to compare physiological variables of other games Players also.
7 This study will provide guide line to physicians and physical education teacher for improvement of physical education training program among sedentary students.
8 This research recommends that, by using walking, jogging, squat thrust and side step jumps exercises we can improve Cardio-vascular or Cardio-Respiratory Endurance of a sedentary student.

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