

## Impact of Eight Weeks Conditioning Program on Selected Physiological Variables

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### Abstract

The main purpose of the study was to find out the effect of eight weeks conditioning program on selected physiological variables. To achieve the purpose 40 B.P.Ed male students of 1<sup>st</sup> semester were selected from the Panskura Banamali College, Purba-Medinipur, West-Bengal and their age ranged between 21 to 25 years. All the subjects had gone through a planned conditioning program of eight weeks but before giving the training a pre-test was taken and physiological variables like resting heart rate, blood pressure, vital capacity and resting respiratory rate were measured and after completion of eight weeks training final test of all said physiological variables were again measured. To analyze the results student t-test was employed and result showed that increase of resting heart rate, diastolic blood pressure, systolic blood pressure, mean blood pressure, vital capacity and resting respiratory rate the significant difference was observed between pre-test and post-test score of said physiological variables. From this study it may be concluded that planned conditioning program put significant effect on physiological variables.

**KEYWORDS:** Conditioning, Physiological Variables.

### INTRODUCTION

B.P.Ed course is recognized by National Council of Teachers Education (NCTE) and the duration of the said course is now for two years. The aim of this course is to produce a skillful physical education teacher for upper primary schools. According to the eligibility criteria made by NCTE, a sports person with state or national certificate holders can get admission in this course as well as an academic good student with above 50% marks in aggregate and having physical education as subject can take admission. As a result, it became heterogeneous group in terms of fitness and academics. Though most of the students came from sports background, they had specific fitness related to their games but in the B.P.Ed course numerous games are taught (more than twenty) during the entire course and the students have to learn almost all the skills of those games. For that reason, every student is conditioned in such manner that they can take the training of all the game efficiently without getting any injury. Some students do not have any sports background, they also need to be conditioned to participate in all games. So for the B.P.Ed students conditioning is an important aspect which help them to successfully complete the course till to the end. Conditioning exercises are body movements that increase athletic skill and physical fitness while avoiding sports injuries. Programs may include weight training, aerobic exercise, plyometrics, calisthenics, and exercises based on real-life motions. Types of conditioning exercises may vary greatly depending on fitness goals and adaptable to any level of fitness, from beginners to experienced athletes. One of the goals of sports conditioning exercises is with the increasing the amount of stress the body can endure before experiencing injury (Voight J 2022). Conditioning exercises have an important role in preventing injury because they get the body to become more tolerant of

sustained effort. Increasing strength and flexibility are the most important components of preventing injury. Balance and strength of the tissues in our body rely largely on the amount of exercise we perform each week. This exercise increases the fitness of the tissues in our body, whether through building muscles, burning fat or increasing the efficiency of your organs (Sherwood 2007). Therefore, conditioning is an important aspect and essential for all the B.P.Ed. students not only to keep themselves fit to get training for all the games but also to avoid injury. Looking to the importance of conditioning the scholars tried to find out the effect of condition in gprogram on certain physiological variables on students.

## METHODELOGY

For this study the scholar selected only 40 B.P.Edmale students of 1<sup>st</sup> semester from the Panskura Banamali College, Purba-Medinipur, West-Bengal. The reasons for selecting the B.P.Ed students were firstly they did not have any experience of conditioning program before, where a student is conditioned for getting the training of around twenty games and secondly this course is residential in nature as the classes begin early in the morning and ends in the evening (whole day activity) so it was convenient for the scholar to avail them and to control various extraneous variables. The age of the subject range from 21 to 25 years.

All the variables were measured two times by the scholar who had the expertise of measuring the various physiological variables. 1<sup>st</sup> measurement was taken before initiating the training program and at the end of the 8 weeks of training program 2<sup>nd</sup> measurement was taken. Every day in the morning, except Sunday and holiday the 60-minute conditioning was given for 8 weeks. All the subjects were gone through the training schedule followed by practical classes, both in morning and evening according to their respective syllabus. The scholar prepared this training schedule after consulting the experts into the field. A conditioning program which was followed in the Panskura Banamali College was modified by the scholar for the purpose of the study. The departmental teachers of Panskura Banamali College were consulted by the scholars and they were all requested to follow the same. The scholars personally tried to remain in the conditioning program during the period of study. In the absence of the scholars the senior faculty members of the Department were requested to supervise the conditioning classes so that prepared schedule was followed. It was ensured by the scholar that all the selected subjects participated in the conditioning program regularly without any absence.

Following variables, test and measuring criteria were selected for the study:

Sl. No	Variables	Test and Measuring Criterion
1.	Resting Heart Rate (RHR)	Palpate Method from Radial Artery (Beats/Min.)
2.	Blood Pressure Systolic Blood Pressure (SBP ) Diastolic Blood Pressure (DBP ) Mean Blood Pressure (MBP)	Sphygmomanometer (mm/Hg)
3.	Vital Capacity (VC)	Spiro-win (liter.)
4.	Resting Respiratory Rate (RRR)	Movement of Diaphragm by palpate method (Number of Inhalation and Exhalation /Min.)

## TRAINING SCHEDULE

DAY	Objectives	ACTIVITY		
Monday	Development of Flexibility	Slow Continuous Running Time: 20min. Intensity: Low-Medium	Stretching Exercise (all major Joints) Time: 40 min. Method: Static and PNF	
Tuesday	Development of Explosive Strength	Warming- up followed by mild stretching Time: 10 min. Intensity: Medium-High	Plyometric Training Time: 50 min. No. of Exercise: 10 Smooth to explosive movement. (Set and Repetition depending upon the nature of the activity)	
Tuesday	Development of Speed	Various Drills for Warming up, like: Walking High Knees, Paw Drill, Hands on Hips High Knees, Bounding etc. Time: 15 min.	Interval Training	
			Intensive	Extensive
			Intensity : medium - high Repetition:08/Set Set: 03	Intensity : Very High Repetition: 15
Thursday	Development of Strength	Jogging, Exercise with lighter and heavier partners Time: 20 min. Intensity: Medium –High	Circuit Training with light weight to develop explosive strength Intensity – High Set No.- 03	Core strength Exercise followed by stretching Time: 15 min. 8-10 Exercise.
Friday	Reduce monotony of the training session	Jogging and Stretching Exercise Time: 25 min. Intensity: Low to Medium	Different Recreational Activity Time: 35 min.	
Saturday	Development of Endurance	Long Distance Running (9K.M) / Fartlek / Continuous Running for 30-40 min.	Stretching Exercise / Pranayama / Meditation Time: 20 min.	
Sunday	---	Rest	---	

## STATISTICAL ANALYSIS

A student 't'- test was employed to find out the effect of eight week conditioning program on selected physiological variables the data and significance level was set at 0.05.

## RESULTS

In order to identify the significant differences between pre-and post-training data on selected variables student 't'-test was employed. The findings of the study have been presented with the help of following table.

**Table-1**  
**Comparison of Pre-Test and Post Test Mean Difference after 8 weeks**  
**Conditioning Program on Selected Physiological Variables**

Variables	Mean		‘t’
	Pre Test	Post Test	
Resting Heart Rate (RHR)	74.69	69.59	3.50*
Diastolic Blood Pressure (DBP)	85.10	82.10	3.36*
Systolic Blood Pressure (SBP)	126.83	123.31	3.69*
Mean Blood Pressure	39.13	43.5	3.32*
Vital Capacity (VC)	2.71	3.10	2.17*
Resting Respiratory Rate (RRR)	20.10	18.47	2.67*

‘t’ (df = 28) = 2.05

Significant at 0.05 level

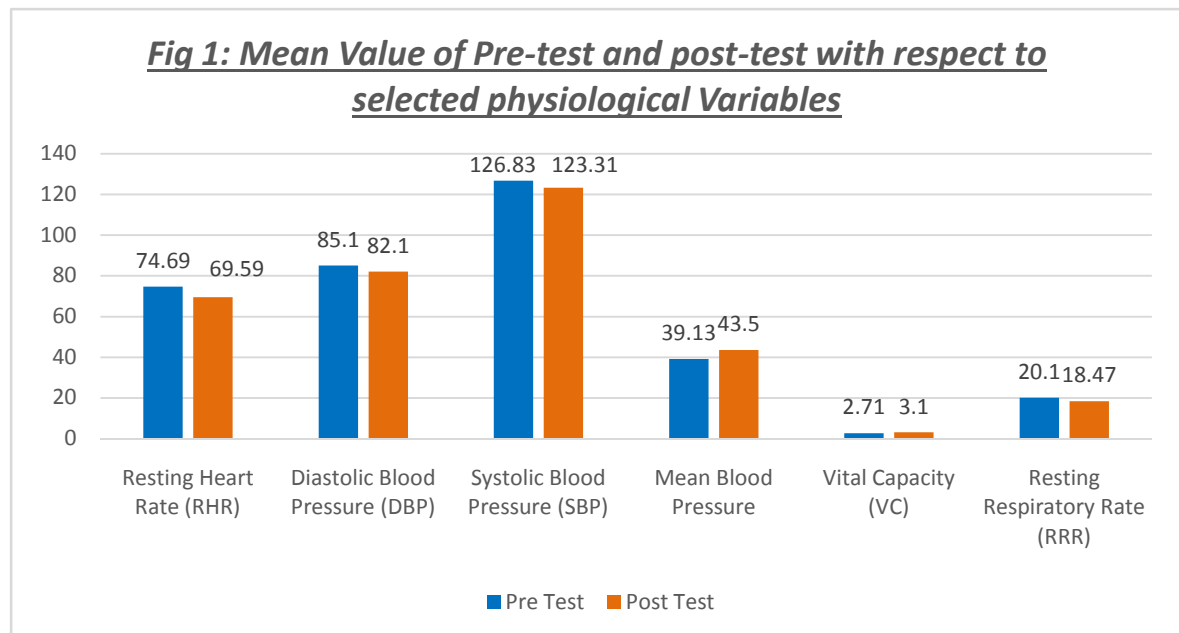


Table no-1 shows that incase of resting heart rate, diastolic blood pressure, mean blood pressure vital capacity and resting respiratory rate the calculated ‘t’-value of pre-test and post-test were 3.50, 3.36, 3.69, 3.32, 2.17 and 2.67 respectively which were greater than the tabulated ‘t’-value (2.05) at 0.05 level of significance. So, this indicates that the selected conditioning program played a significant role on selected physiological variables.

**DISCUSSION**

While analyzing the effect of eight week planned conditioning program on physiological variables of B.P.Ed. students i.e.,within the age group of 21- 25 years male, the results revealed that there was highly significant improvement in the heart rate, diastolic blood pressure, systolic blood pressure, mean blood pressure, vital capacity and resting respiratory rate. It has been observed in other studies that the effect of training is observed after longer training schedule. While assessing the mean pressure it was found that before the training schedule the mean pressure of most of

the subjects were under 40mm/hg, which is consider as a leaky heart valve and after taking the eight weeks conditioning program their mean blood pressure increased and it became normal. So, a planned conditioning program had positive impact on physiological variables. The findings of the study are corroborated with the study of Panday and Yadav (2016) who reported that eight week of conditioning program had significant effect on resting heart rate, vital capacity, systolic and diastolic blood pressure.

## CONCLUSION

Many research studies have been done on the impact of different training methods on physiological variables. It is proved that different training program has significant impact on physiological parameters. The findings of the study revealed that a planned conditioning program, which is a combination of different training methods has statistically significant impact on physiological variables.

On the basis of the results obtained from the present empirical investigation and within the limitation, the following conclusions are drawn after giving the eight weeks of planned conditioning program.

- i. The physiological parameters i.e the resting heart rate, diastolic blood pressure, systolic blood pressure and mean blood pressure, resting respiratory rate were significantly reduced after giving eight-week planned conditioning training program.
- ii. Vital capacity was significantly improved after giving eight-week planned conditioning training program.

It could be recommended from the findings of the present study that the physical education institutions who are imparting training to the physical education professional students should compare the impact of planned and unstructured conditioning program on physiological functions and accordingly plan out their curricula. Moreover, some studies could be conducted to observe how much time is required to bring significant changes on physiological variables due to unstructured conditioning program.

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