

COMPARATIVE STUDY OF DIFFERENT PHYSIOLOGICAL VARIABLES BETWEEN THE STUDENTS OF TWO TYPES OF TRAINING INSTITUTION

¹Dr.Asish Paul ²Debasri Mahata

¹Assistant Professor, State Institute of Physical Education for Women, Hastings House, Alipur, W.B, India

²M.P.Ed.-II, State Institute of Physical Education for Women, Hastings House, Alipur, W.B., India

ABSTRACT

The purpose of the study was to find out the difference of the students of two type of training institution as the Bachelor of Physical Education and the primary Teachers Training institution considering different Physiological variables. 30 students at the age group of 21-25yrs. were considered from each of the institution as the subject of the study. The Physiological variables were blood glucose level, pulse rate, blood pressure and the data were collected both in the resting and exercised condition. There was no significant difference found in case of blood glucose level in both the resting and exercised condition. The resting heart rate(96.8) of the students of the P.T.T.I. were significantly higher but the exercised heart rate(135.8) were significantly lower than the students of the B.P.Ed. institution(70.30 and 163.5 respectively). The resting systolic blood pressure(122.5) of the P.T.T.I. students were significantly higher and the diastolic blood pressure(59.0) were significantly lesser than that of the B.P.Ed. students(106.80 and 66.3 respectively). In case of exercised condition both the systolic blood pressure(152.0) and the diastolic blood pressure(68) of the B.P.Ed. students were higher than that of P.T.T.I. students(128.0 and 56 respectively).

Keywords: Physiological variables, training institution, blood glucose, blood pressure and heart rate.

INTRODUCTION:

In education spectrum the teachers training institutions in different levels bears an immense responsibility to prepare the teacher for the teaching profession and are keeping an bonding part with the growing citizens and the nation in respect of research and different outreach activity. Different teachers training institution such as Physical Education teachers training Institution, teachers training institution of general education, Primary teachers training institution etc. having some general characteristics considering their educational curriculum. The basic theory part in

association with practical classes influenced by art, culture, sports, social science etc. It is evident that the student of Physical Education are physically more fit than the students of other type of Institution. The internal organic function, the psychological makeup, the physical fitness in all respect the student of a physical education training institution bears a more confident position in comparison to the students of other institution. Considering the anthropometric parameters there is no doubt that who have better alignment and structure. The present researchers confined themselves towards the different physiological variables. It is very important to study the Physiological status of the students and to compare the status of the internal organic functioning considering different physiological variables between the students of the training institution of Bachelor Physical Education(B.P.Ed.) and the Primary Teacher Training Institution(P.T.T.I.).

The present study was concerned with the comparisons of different Physiological variables such as the blood glucose level, pulse rate, blood pressure between the students of two types of training college. The purposes of the study were to found out the Physiological status of the students of two type of institution and to compare the status of the internal organic functioning considering different physiological variables between the students of two types of training institution in resting and as well as in exercised condition. No such related literature has found through internet, books, library and different other sources where these type of students of two training institutes were compared considering their different variables not only the Physiological but also the others. Different relevant study has found where the researcher compared the different variables among sedentary and active person and that were accepted for preparing this thesis.

METHODOLOGY:

30 students from each of the two institution belonging to the Primary Teachers Training Institution, Hastings House and the State Institute of Physical Education for women, Hastings House, Kolkata were considered as the subjects of the study. All the students were 21- 25 years old. The students of both the institutions were resides in the student hostel. The life style,

socioeconomic condition, daily routine life, previous health status were not considered here. The following Physiological variables were taken into consideration:-

- a. Blood glucose level at rest (RBG) and after exercise (EBG)
- c. Pulse rate at rest (RPR) and after exercise (EPR)
- e. Blood pressure at rest (RBP) and after exercise (EBP)

The resting pulse rate and the resting blood pressure were taken in the morning after normal and satisfactory wake up from sleep. On the onset of the activity the resting blood glucose level were collected and immediately after 1.5 km. run i.e. after the endurance activity the exercised blood glucose level, exercised pulse rate and the exercised blood pressure were taken.

The said criteria were measured for three days. At the beginning the name and age were recorded. Then the different physiological measures such as the resting blood glucose level, exercised blood glucose level, resting pulse rate, exercised pulse rate, resting blood pressure, exercised blood pressure were taken.

RESULTS AND DISCUSSIONS:

Table no 1: The mean and the "t" score of the different physiological variables

Variables	P.T.T.I. students		B.P.Ed. students		't' score
	Mean	S.D.	Mean	S.D.	
Resting Blood Glucose level (mg/dl)	95.4	12.14	95.3	13.91	0.06
Exercised Blood Glucose level (mg/dl)	112.4	19.91	111.0	24.71	0.189
Resting Heart Rate (bt/min.)	96.8	4.09	70.30	8.56	3.55**
Exercised Heart Rate (bt/min.)	135.8	31.47	163.5	20.19	12.19**
Resting Blood Pressure (Sys) (mmHg)	122.5	16.85	106.80	12.91	9.10**
Resting Blood Pressure (Dias.) (mmHg)	59.0	9.64	66.3	6.41	5.76**
Exercised Blood Pressure (Sys) (mmHg)	128.0	10.77	152.0	13.26	5.48**
Exercised Blood Pressure (Dias) (mmHg)	56.0	9.15	68.0	8.71	7.92**

Significance level 0.05%

From the table no. 1 it was clear that there was no significant difference found in case of blood glucose level in both the resting and after exercise. The resting heart rate of the students of the P.T.T.I. were significantly higher but the exercised heart rate were significantly lower than the

students of the B.P.Ed. institution. The resting systolic blood pressure of the P.T.T.I. students were significantly higher and the diastolic blood pressure were significantly lesser than that of the B.P.Ed. students. In case of exercised condition both the systolic blood pressure and the diastolic blood pressure of the B.P.Ed. students higher than that of P.T.T.I. students.

The blood glucose level in both the case of resting and after exercise were almost same and naturally no significant difference occur. This is due to the habit of optimum caloric intake, as the student in both the institutions were taken their daily food stuff from their own hostel kitchen with minimum expenditure as low as possible. The students of both the two institution also engaged in very busy schedule whether it was the practical or theoretical. In the present study, it was observed that the resting H.R. of the B.P.Ed students who have been exercising regularly for their curriculum purpose and undergone an active lifestyle as they are habituated was significantly lower than that of the other group. Dixon EM et.al have found the similar results. They found that the resting heart rate of the athletes was lower than that of the sedentary groups. This was due to the normal physiological functioning of the heart. Due to the hypertrophy of the papillary muscles of the heart this variation occurs. After the same type of exercise the heart rate of the student of B.P.Ed. increase rapidly than that of their counterpart to cope the external demand. Resting Systolic Blood Pressure showed significant increase and diastolic blood pressure decrease in sedentary students which can be attributed to the life style as for the students of B.P.Ed. who engaged in activity for more than 4 hrs. in the morning and evening whereas their other part were not enjoyed it.

The significant difference of post exercise Systolic Blood Pressure and Diastolic Blood Pressure of the said two group denoting the normal functioning of physiological and autonomic nervous system. The increase of blood pressure in comparison to the sedentary students after the exercise may be attributed towards the greater demand of blood supply to the different body parts at the time of exercise to achieve greater work capacity. Karpovich and Sinning (1971) were of the opinion that both systolic and diastolic pressure changes during exercise. The diastolic pressure changes little and systolic pressure changes considerably, the pulse pressure tends to increase and decrease with the systolic pressure.

CONCLUSIONS:

1. The cardiorespiratory efficiency of the students of Bachelor of Physical Education were greater than the students of the Primary teacher training college.
- 2 The cardiovascular function of the Bachelor of Physical Educationstudents were higher in comparison to that of the primary teacher training students.
3. In case of blood glucose level there was no difference in resting and exercised condition.
4. The systolic blood pressure in resting condition of the primary teachers training students were higher than that of the Bachelor of Physical Educationstudents.
5. The diastolic blood pressure in resting condition of the primary teachers training students were lesser than that of the Bachelor of Physical Education students.
6. The systolic blood pressure after exercise of Bachelor of Physical Educationstudents were higher than that of the primary teachers training students .
7. The diastolic blood pressure after exercise of the Bachelor of Physical Educationstudents were higher than that of the primary teachers training students.

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