ABSTRACT

The purpose of this study was to determine the “Effect of Bhramari Pranayama and Physical Exercises on Physical and Mental Health of Undergraduate players”.

The subjects for the proposed study were 120 students studying in IIT B.H.U., M.G.K.V.P. Varanasi and A.M.P.G. College Varanasi. All the subjects were divided into four group i.e. BHP group, PT group, BPPT group and Control group. In each group male students (15each) and female students (15each) were divided into equal numbers. The age of the subject were ranged between 18 to 25 years.

The subject of Experimental group were given eight weeks systematic training program of physical exercises and Bhramari Pranayama, whereas the control group were not be given any kind of training programme. In the present study Physical health (Body) & mental health (Mind) are two major important aspect of life, which are considered as major health variables. The out of two health variables, physical health further divided into two part physical measures & physiological measures, physical measures were included Flexibility, Muscular Strength, Shoulder Power, Speed and Cardiovascular Endurance and Physiological measures were included Blood pressure, Pulse rate, Respiratory rate, Vital capacity, Body Weight and Hemoglobin.

For measuring each health components following instruments were used. Flexibility was measured help of correctly sit-ups in one minute. Muscular Strength was measured by Standing Broad Jump. Shoulder Power was measured by Medicine Ball Throw. Speed was measured by 50 metres sprint test. Cardio-vascular Endurance was measured by 600
yard run-walk test. Physiological components were measured through specific equipments specially designed for measuring the physiological variables. Blood Pressure (Systolic & Diastolic) was measured by the help of Stethoscope & Sphygmomanometer. Pulse Rate was obtained by counting pulse beats on radial artery for one minute, with the help of stop watch. Respiratory rate was measured obtained by counting inhalation and exhalation for one minute, with the help of stop watch. Vital Capacity was measured with the help of dry Spiro meter and the score was recorded in 100ml unit. Body Weight of the subjects was taken with the help of weighing machine. Hemoglobin was measures with the help of laboratory and score was recorded in mgdL. Mental health was measured by using Mental Health Inventory (MHI) constructed and standardized by Dr. Jagdish and Dr. A.K. Srivastava (1986). Prakriti Pariksa Deha prakriti was measured by using prakriti parameters developed by Dubey and Singh (1970). Based on individual prakriti i.e., vatika, pattika and kaphaja. And Manasa prakriti Assessment of manasa prakriti viz, sattvika, rajasika and tamasika was done based on parameters developed by Singh R. H (1980). All tests and measurements were administered from the Month of April to May 2015 to June to August 2015 on undergraduate players.

The reliability of data was censured by establishing the instrument reliability, tester’s competency, reliability of the tests and the subject reliability. Tester’s competency and reliability of tests were established by test-retest method and the reliability co-efficient were found to be satisfactorily high.

The sample has been selected using stratified purposive sampling technique. In order to test the effect of training, the collected data from all four group. The experimental design has been employed in four
parallel groups. Pre tests and post tests experimentation on physical, physiological and mental health variables were statistically analyzed by using one-way factorial analysis of variance repeated measures of the present study.

Whenever, one-way factorial ANOVA with last factor repeated the obtained ‘F’ ratio interaction values are found to be significant, the simple effect test is used. When the obtained ‘F’ ratio value in the simple effect is found significant, the (Post hoc test) is applied to determine which of the paired mean had significant differences in different groups. In all the cases the level of confidence is fixed at 0.05 to test the significance. On the basis of the analysis of data as well as in the view of observation, along with the objectives and within the limitations of the present study the following conclusions were drawn:

Physical exercises and Bhramari Pranayama reveals significant improvement in physical, physiological and mental health variables when compared to the pre test and post test.

1. The study showed significant improvement in Flexibility of Bhramari pranayama group Physical Training group and both Bhramari pranayama group & Physical Training group due to additive effect of Bhramari Pranayama Training and Physical exercises Training and both Bhramari Pranayama & Physical exercises Training program in undergraduate male players.

2. The study showed significant improvement in Flexibility of Bhramari pranayama group Physical Training group and both Bhramari pranayama group & Physical Training group due to additive effect of Bhramari Pranayama Training and Physical exercises Training and both Bhramari Pranayama & Physical exercises Training program in undergraduate female players.
3. The study showed significant improvement in Muscular Strength of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in male players.

4. The study showed significant improvement in Muscular Strength of Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in undergraduate female players.

5. The study did not show significant improvement in Muscular Strength of Bhramari Pranayama group due to Bhramari Pranayama Training program in female players.

6. The study showed significant improvement in Shoulder Power of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in undergraduate male players.

7. The study showed significant improvement in Shoulder Power of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in female players.

8. The study showed significant improvement in Speed of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of
9. The study showed significant improvement in Speed of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in female players.

10. The study showed significant improvement in Cardio-vascular Endurance of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in undergraduate male players.

11. The study showed significant improvement in Cardio-vascular Endurance of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in female players.

12. The study showed significant improvement in Blood Pressure (systolic) of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training and both Bhramari Pranayama Training & Physical exercises Training program in undergraduate male players. But did not show significant improvement in Physical Training group of male players.

13. The study did not show significant improvement in Blood Pressure (Systolic) of Bhramari Pranayama group, Physical Training group and
both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training & Physical exercises Training and both *Bhramari Pranayama* Training & Physical exercises Training program in undergraduate female players.

14. The study showed significant improvement in Blood Pressure (Diastolic) of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training and both *Bhramari Pranayama* Training & Physical exercises Training program in female players. But did not show significant improvement in Physical Training group of female players.

15. The study did not show significant improvement in Blood Pressure (Diastolic) of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training & Physical exercises Training and both *Bhramari Pranayama* Training & Physical exercises Training program in undergraduate male players.

16. The study showed significant improvement in Pulse rate of Physical Training group due to additive effect of Physical exercises Training program in male players. But did not show significant improvement in Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group of male players.

17. The study did not show significant improvement in Pulse rate of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training & Physical exercises Training and both *Bhramari Pranayama* Training & Physical exercises Training program in undergraduate female players.
The study showed significant improvement in Respiratory rate of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training and both Bhramari Pranayama Training & Physical exercises Training program in female players. But did not show significant improvement in Physical Training group of male players.

The study showed significant improvement in Respiratory rate of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in female players.

The study showed significant improvement in Vital capacity of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training, Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in male and female players.

The study showed significant improvement in Body weight of Bhramari Pranayama group and Physical Training group due to additive effect of Bhramari Pranayama Training and Physical exercises Training program in female players. But did not show significant improvement in Bhramari Pranayama & Physical exercises group of female players.

The study did not show significant improvement in Body weight of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of Bhramari Pranayama Training & Physical exercises Training and both Bhramari Pranayama Training & Physical exercises Training program in undergraduate male players.
23. The study did not show significant improvement in Haemoglobin of Bhramari Pranayama group, Physical Training group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training & Physical exercises Training and both *Bhramari Pranayama* Training & Physical exercises Training program in undergraduate male players.

24. The study showed significant improvement in Haemoglobin of Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training & Physical exercises Training program in female players. But did not show significant improvement in Bhramari Pranayama and Physical exercises group of female players.

25. The study showed significant improvement in Mental Health of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training and both *Bhramari Pranayama* Training & Physical exercises Training program in female players. But did not show significant improvement in Physical exercises group of female players.

26. The study showed significant improvement in Mental Health of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training group due to additive effect of *Bhramari Pranayama* Training and both *Bhramari Pranayama* Training & Physical exercises Training program in male players. But did not show significant improvement in Physical exercises group of male players.

27. The study showed significant improvement in physical components like Flexibility, Strength, Power, Speed & Cardio-Vascular Endurance among the different groups of male players due to training programme.

28. The study showed significant improvement in physical components like Flexibility, Strength, Power, Speed & Cardio-Vascular Endurance
among the different groups of female players due to training programme.

29. The study showed significant improvement in physiological components like Respiratory Rate, Vital Capacity & Weight among the different groups of male players after the training. But there is no significant changes found in BP (systolic/diastolic), Pulse Rate, & Haemoglobin among the different groups of male undergraduate players due to training programme.

30. The study showed significant improvement in physiological components like BP (systolic/diastolic), Respiratory Rate, & Weight among the different groups of female players after the training. But there is no significant different found in scores of Pulse Rate, Vital Capacity & Haemoglobin among the difference groups of female undergraduate players.

31. The study showed significant improvement in Mental Health among the different groups of male and female undergraduate players due to training programme.

The impact of Physical exercises and Bhamari Pranayama training in male and female undergraduate players; on physical, physiological and mental health variables when compared to the control group are given as below.

1. The study showed significant improvement in Flexibility of Bhamari Pranayama group and both Bhamari Pranayama & Physical Training group compared to the control group due to Bhamari Pranayama Training and both Physical exercise Training & Bhamari Pranayama Training program in female and male players. But did not show significant improvement in Physical Training group compared to the control group due to Physical exercises program in male and female players.
2. The study did not show significant improvement in Muscular Strength of all three experimental groups compared to the control group in undergraduate male and female players.

3. The study showed significant improvement in Shoulder Power of all three experimental groups compared to the control group in undergraduate male and female players.

4. The study did not show significant improvement in Shoulder Power of all three experimental groups compared to the control group in undergraduate male and players.

5. The study showed significant improvement in Speed of all three experimental groups compared to the control group in undergraduate female undergraduate players.

6. The study showed significant improvement in Speed of Bhramari Pranayama group and Physical Training groups compared to the control group in undergraduate male undergraduate players.

7. The study showed significant improvement in Cardio-vascular Endurance of Bhramari Pranayama group compared to the control group in undergraduate male players.

8. The study showed significant improvement in Cardio-vascular Endurance of Bhramari Pranayama & Physical Training group compared to the Control group in undergraduate female players.

9. The study did not show significant improvement in Blood Pressure (Systolic) of all three experimental groups compared to the Control group in undergraduate male and female players.

10. The study showed significant improvement in Blood Pressure (Diastolic) of Bhramari Pranayama group and both Bhramari Pranayama & Physical Training groups compared to the Control group in undergraduate female players. But did not show significant
improvement in all experimental groups compared to the Control in undergraduate male players.

11. The study did not show significant improvement in pulse rate of all three experimental groups compared to the Control group in undergraduate male and female players.

12. The study showed significant improvement in respiratory rate of all three experimental groups compared to the Control group in undergraduate male and female players.

13. The study showed significant improvement in vital capacity of Bhramari Pranayama groups and both Bhramari Pranayama & Physical Training group compared to the Control group in undergraduate male players. But did not show significant improvement in all three experimental groups compared to the Control group in female players.

14. The study did not show significant improvement in body weight of all three experimental groups compared to the Control group in undergraduate male and female players.

15. The study did not show significant improvement in hemoglobin of all three experimental groups compared to the Control group in male and female players.

16. The study showed significant improvement in Mental Health score of Bhramari Pranayama groups and Bhramari Pranayama & Physical Training group compared to the Control group in undergraduate male and female players. But did not show significant improvement in Physical Training group of male and female players.