



## **EFFECT OF PHYSICAL TRAINING AND YOGA PRACTICES ON BMI**

**Mukesh Kumar Taker\* & Dr. Pramjeet Singh Ghuman\*\***

\* Research Scholar, Department of Physical Education,  
Poonima University, Jaipur

\*\*Professor, Department of Physical Education, Poonima University, Jaipur

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### **Abstract:**

The purpose of the preset study was to find out the effect of physical training and yoga practices on BMI. To achieve the purpose of this study, Ninety untrained students was selected from Poonima University, Jaipur of professional course during the academic year 2015 – 16 between age group of 18 to 21 years. The selected subject was divided into three groups with thirty subjects in each group selected randomly, with two experimental groups and one control group. Experimental Group-I underwent the physical training in selected exercise. Experimental Group-II underwent the selected yoga asana. The training period of experimental groups was twelve weeks, five days per week with duration of 70 minutes. Control group-III did not undergo any training programme rather than their routine work. The experimental group namely physical activity group exhibited decreased mean values from the pre test to post test, whereas the yoga activity group and control groups exhibited increased mean values from the pre test to post test in regard to body mass index variable shows in the table no. 1 the pre-mean and pre-S.D. values of Physical activity Group, Yoga activity Group and the Control Group were found to be  $25.33 \pm 4.68$ ,  $21.79 \pm 3.14$ , and  $21.91 \pm 3.48$  respectively such as post-mean and post-S.D. values of Physical activity Group, Yoga activity Group and the Control Group were found to be  $7623.32 \pm 3.65$ ,  $21.89 \pm 2.96$  and  $22.69 \pm 3.04$  respectively. As shown in the table ( $p > .05$ ) post-BMI values of control group were no significantly effect than the pre-BMI values of training group. Hence physical activity group is significantly affected of body mass index variable.

**Key Words:** Body Mass Index, Physical Activity & Yoga Activity

### **Introduction:**

Physical education has developed recently to incorporate a greater variety of activities besides typical sports. Introducing students to activities like bowling, walking, hiking and frisbee at an early age can help students develop good activity habits that will carry over into adulthood. Some teachers have even begun to incorporate stress-reduction techniques such as yoga, deep-breathing and tai chi. Tai chi, an ancient martial arts form focused on slow meditative movements is a relaxation activity with many benefits for students.

Fitness is a very broad term, it includes physical, mental, social and moral aspects. Being concerned with physical education. He is very much keen to deal with physical fitness which is directly related to sports performance. Physical fitness can be developed and maintained by systematic and periodical training programs designed according to age. Individual vacations includes age, sex, genetic makeup etc. are to be considered in planning training program for physical fitness for each individual in unique and has its own pace of development, great variation occur within the same age and sex group individuals, so principle of individuals. So the principle of individuals difference to come an important factor in designing physical fitness training program physical exertion is intimately associated with sports training and age, so the balance should be made between exertion & training schedules.

### **Methodology:**

The purpose of the preset study was to find out the effect of physical training and yoga practices on health related physical fitness and physiological variables. To achieve the purpose of this study, Ninety untrained students was selected from Poonima University, Jaipur of professional course during the academic year 2015 – 16 between age group of 18 to 21 years. The selected subject was divided into three groups with thirty subjects in each group selected randomly, with two experimental groups and one control group. Experimental Group-I underwent the physical training in selected exercise. Experimental Group-II underwent the selected yoga asana. The training period of experimental groups was twelve weeks, five days per week with duration of 70 minutes. Control group-III did not undergo any training programme rather than their routine work.

The samples belong to the middle socio-economic status. Prior to the administration of the test all subjects was assembled and a brief description was given about the purpose and requirement of testing procedures of the study to make them understand about what they are actually required to do during the experiment or the study. Three sessions were spent to familiarize the subjects with the techniques involved in executing the physical training and yogic training, which helped them to perform exercises properly and avoid injures. The subjects were verbally motivated to attend the training session regularly. All subjects agreed voluntarily to cooperate in the testing procedure which was to be explained to them.

**Descriptive Statistics of Body Mass Index (BMI):**

The analysis of covariance on the data obtained for BMI of pre and post-test of physical training (PTG), yoga practices (YPG) and control (CG) groups have been presented in table 4.5.

Table 1: Descriptive statistics of the data measured in the pre and post testing Body Mass Index

| Group             |           | N  | Mean  | S.D  | S.E.D |
|-------------------|-----------|----|-------|------|-------|
| Physical Training | Pre-Test  | 30 | 25.33 | 4.68 | 0.86  |
|                   | Post-Test | 30 | 23.32 | 3.65 | 0.67  |
| Yoga Practices    | Pre-Test  | 30 | 21.79 | 3.14 | 0.57  |
|                   | Post-Test | 30 | 21.89 | 2.96 | 0.54  |
| Control Group     | Pre-Test  | 30 | 21.91 | 3.48 | 0.64  |
|                   | Post-Test | 30 | 22.69 | 3.04 | 0.56  |

Table 1 indicates the values of descriptive statistics of the experimental groups (Physical activity Group and Yoga activity Group) & Control Group for physical fitness variable of BMI, which shows that the pre-mean and pre-S.D. values of Physical activity Group, Yoga activity Group and the Control Group were found to be 25.33±4.68, 21.79±3.14, and 21.91±3.48 respectively such as post-mean and post-S.D. values of Physical activity Group, Yoga activity Group and the Control Group were found to be 23.32±3.65, 21.89±2.96 and 22.69±3.04 respectively. Above table also indicates the pre-S.E.D values of Physical activity Group, Yoga activity Group and the Control Group were found to be 0.86, 0.57, 0.64 respectively and post-S.E.D values of Physical activity Group, Yoga activity Group and the Control Group were found to be 0.67, 0.54 and 0.56 respectively.

Table 2: Paired t-test description all Groups between pre and post value of BMI

| Groups            | Paired Group       | Mean Difference | S.D  | S.E.D | DF | t-value | Sig. (2-tailed) |
|-------------------|--------------------|-----------------|------|-------|----|---------|-----------------|
| Physical Training | Pre BMI - Post BMI | 2.01            | 3.29 | 0.60  | 29 | 3.35*   | 0.002           |
| Yoga Practices    | Pre BMI - Post BMI | -0.103          | 0.56 | 0.10  | 29 | -1      | 0.32            |
| Control Group     | Pre BMI - Post BMI | -0.78           | 0.99 | 0.18  | 29 | -1.29   | 0.28            |

(p<.05) \*Significant at 0.05 level of confidence.

Table 2 indicates the pre BMI and post BMI paired t-test values of Physical Activity group, yoga group and control group separately. The Physical Activity group pre-weight and post-weight paired mean difference, S.D., S.E.D and t-values were found to be 2.01, 3.29, 0.60 and 3.35 respectively. As shown in the table (p<.05) post-BMI values of physical activity group were significantly greater than the pre-BMI values of physical activity group. Hence the null hypothesis is rejected and there was significant effect of Physical Activity on BMI (Health Related Physical Fitness variable). The Yoga Activity group pre-BMI and post-BMI paired mean difference, S.D., S.E.D and t-values were found to be -0.1.3, 0.56, 0.10, and -1 respectively. As shown in the table (p>.05) post-BMI values of yoga activity group were no significantly effect than the pre-BMI values of physical activity group. Hence the null hypothesis is accepted and there was no significant effect of Yoga activity on BMI (Health Related Physical Fitness variable). The control group (no activity group) pre-BMI and post-BMI paired mean difference, S.D., S.E.D and t-values were found to be -0.78, 0.99, 0.18, and -1.29 respectively. As shown in the table (p>.05) post-BMI values of control group were no significantly effect than the pre-BMI values of Physical activity group. Hence the null hypothesis is accepted and there was no significant effect of Control group (no activity) on BMI (Health Related Physical Fitness variable).

Table 3: ANCOVA-test Description among the physical training, yoga practices and control groups

| Source | Type III Sum of Squares | DF | Mean Square | F      | Sig.  |
|--------|-------------------------|----|-------------|--------|-------|
| BMIPRE | 659.13                  | 1  | 659.13      | 225.98 | 0.00  |
| GROUPS | 44.27                   | 2  | 22.14       | 7.59   | 0.001 |
| Error  | 250.85                  | 86 | 2.92        |        |       |

(P<.05) \*Significant at 0.05 level of confidence

Table 3 indicates the ANCOVA test of difference between the subject effects, which shows that there are a significant difference in pre test values of Health Related Physical Fitness variable of BMI for the three selected groups, as the value has found to be 225.98, which proves to be the base of Analysis of Co-Variance. Also, a significant difference is found between the post test values (Dependent variable) of the experimental and control group as the value has found to be 7.59, which is significant at 0.05 level.

Table 4: Post hoc comparison for the group means in post-measurement adjusted with the initial differences BMI

| (I) Different Groups    | (J) Different Groups | Mean Difference (I-J) | Sig. a (p-value) |
|-------------------------|----------------------|-----------------------|------------------|
| Physical Training Group | Yoga Practices Group | -1.12*                | 0.00             |
| Physical Training Group | Control Group        | -1.83*                | 0.01             |
| Yoga Practices Group    | Control Group        | -0.71                 | 0.68             |

**Based on Estimated Marginal Means:**

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments)

\* The mean difference is significant at the 0.05 level

Table 4 indicates the values of post hoc test for the selected groups for physical fitness variable of BMI, which shows that a significant difference has found between the post test values of physical training group and yoga practices group as the value have found to be -1.12 which is significant at 0.05 level, the post test values of physical training group and control group as the value have found to be -1.83 which is significant at 0.05 level, yoga practices group and the control group as the value have found to be -0.71 which is no significant at 0.05 level.

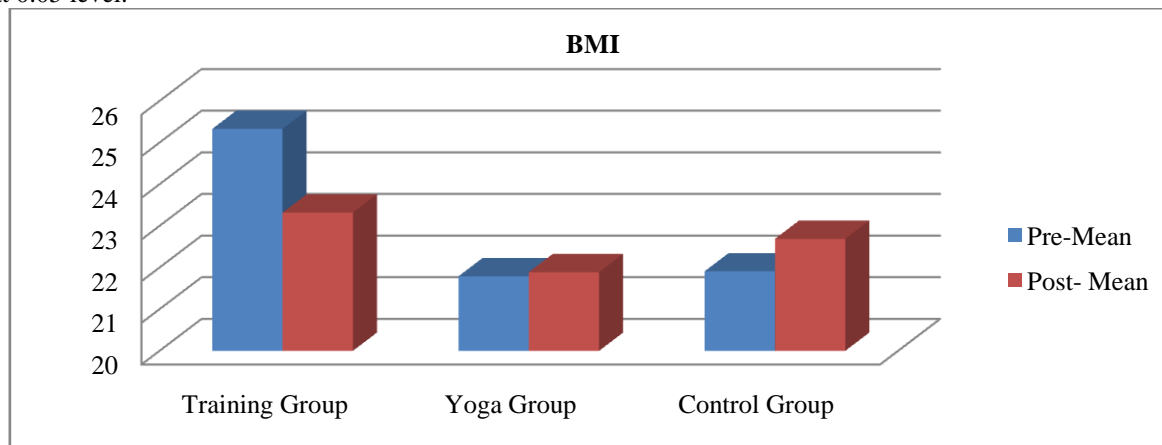


Figure 1: Bar Diagram showing the pre and post mean value of BMI among Physical training, Yoga practices and control groups

**Conclusion:**

The variables namely Body mass index (health related physical fitness) documented significant experimental effect of physical activity group.

- ✓ A few minutes practice daily may help to achieve the expected focus level of mind which is required for better works and studies. Through daily practice one can maintain good physical and mental health for a long period.
- ✓ The findings as a whole concluded that the physical activity and yoga activity having significant experimental effect on health related physical fitness variables and physiological variables. Hence, should be included for professional practices and experimentations.
- ✓ The conducted study further increased the scope of experimentation paradigm for health related physical fitness variables and physiological variables domains. Hence, enriched the academic and scientific practices and book of knowledge

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