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# Evaluation on Resting Pulse Rate through Selected Yogic Practices and Physical Exercises

**M.Hemalatha[1], Dr.P.Mariayyah[2]**

*[1]Ph.D., Research Scholar, Department of Physical Education, Periyar Maniammai University, Thanjavur, Tamilnadu, India.*
*[2]Professor and Director (Former), Department Physical Education, Periyar Maniammai University, Thanjavur, India.*

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**Abstract**

*The present study describes the evaluation of different yogic practices with physical activity through the measurement of resting pulse rate. In this study, female students were divided equally into three groups: those undergoing yogic practice (Group A), physical activity (Group B) and control (Group C). The status of Resting Pulse Rate of all the three groups was measured for a period of three months using Stethoscope and Stop Watch before and after the training period. The obtained pre and post scores were examined by Analysis of covariance (ANCOVA) for assessing the statistical significance. Schefee's Post hoc-test was further applied to find out the best among the three groups. The results confirm that the designed yogic practice package has brought about a significant impact on the resting pulse rate of the yoga group compared to the other two groups.*

**Keywords:** Resting Pulse Rate, Yogic Practice, Physical Exercise.



## Introduction

Yoga is a classification of physical and mental preparation that originated in India thousands of years ago. Yogic practices consist of asanas, breathing and meditation. All are important contributors to health and well being. Amongst the many health benefits that yoga render is the lowering of resting pulse rate. Resting pulse rate is the one of the measures of Physiological variables in heath related fitness. Regular sustained of yogic practices leads to maintain a lower resting pulse rate. A slower heart beat leads; a stronger heart, blood circulation throughout the body, more enduring energy levels, efficient metabolism, to develop aerobic fitness. In simple words, slower heart rates are using to increased lifespan. The present study was under taken to educate the importance of physical activity to the young females and to discover the yogic practice after 3 months has significant effect on resting pulse rate.

## Methodology

To evaluate the training outcomes on resting pulse rate in the course of the selected yogic practices and physical exercises with the residential female university students. For this study, sixty residential female college students were selected at random and were divided into three groups of twenty each namely, group A, group B and group C. The first two groups were experimental groups and the third group was control. The experimental group A underwent a designed yogic practice for three months and similarly, the group B was treated with designed physical exercises. The control group did not undergo any special training.

**Correspondence**
Dr.P.Mariayyah,
E-mail: pmariayyah@yahoo.com, Ph: +9194432 10410

### Package – I / Designed Yogic Practices (Group-A)

**Asana** - Padmasana, Vajrasana, Paschimothanasana, Matsyasana, ArthaMatsyendrasana, Halasana, Bhujangasana, Dhanurasana, Shalabhasana, Sarvangasana, Pawanmuktanasana, Chakrasana, UtthitaParvakonasana, Virabhadrasana, Utkatasana, Vrksasana, Tadasana, Garudasana, Shavasana.
**Pranayama** - Nadisuddhi, NadiShodhana, Ujjayi, Kapalabhati, Bhramari, Bhastrika, Sitalai, Sitakari.
**Meditation -** Observing the breath (Swami Satyananda Saraswathi, 1993).

### Package – II / Designed Physical Exercises (Group-B)

Slow continuous running, Medium phase running, Shot and easy running, Fartleks, Tempo runs, Endurance running (Slow) Explosive running, Skipping, Spilt jumps, Shuttle run, Hopping, Short sprints, Accelerated running, Static and dynamic stretching, Accelerated drills, Striding, L-drills, Side shuffle, Wind sprint, Sprint drills, Falling acceleration, T-Drills, Zig – Zag drill, Four corner drill, Squat jump, Four counts jumping jacks, Step up Jump (8' – 10'), Speed endurance. (Dr. Jay Hoffman, 2002).

### Measures

The collected data of resting pulse rate performance was measured in beats per minute before and after the twelve weeks of training of the two experimental groups (Group -A and Group - B) and Control group with the use of Stethoscope and Stop

Watch. For the accuracy, in this study, the resting pulse rate was measured in the subject's hostel rooms as soon as they woke up from their sleep in the morning. They were instructed to remain in their resting heart rates. However measuring thirty subjects on a single morning was a time-consuming exercise, the result procured was worth the effort made. The resting pulse was measured although the subject remained lying on the bed around 7 a.m. in the morning. The stopwatch was used to count the seconds for starting and ending the heart beat counts. After each minute, when the stopwatch was stopped, both the subjects and investigator called out the number of beats counted by them simultaneously. There were five repetitions of such one-minute counts and the highest count was recording as the subject's resting pulse rate. Number of beats per minute was counted as score. The unchanged test was administered after three months of respective training and was recorded as the post test. The obtained pre and posttest were analyzed by using Analysis of covariance (ANCOVA) for statistical significance. Schefee's Post hoc-test was applied to find out the improved group among the three.

**Results**

Analysis of Co-variance (ANCOVA) was applied for computation where, the final means were adjusted for differences with initial means. The adjusted means of resting pulse rate for yogic practice, physical exercise and control groups were tested for statistical significance and levels of difference, which could offer a solution for the stated research challenge.

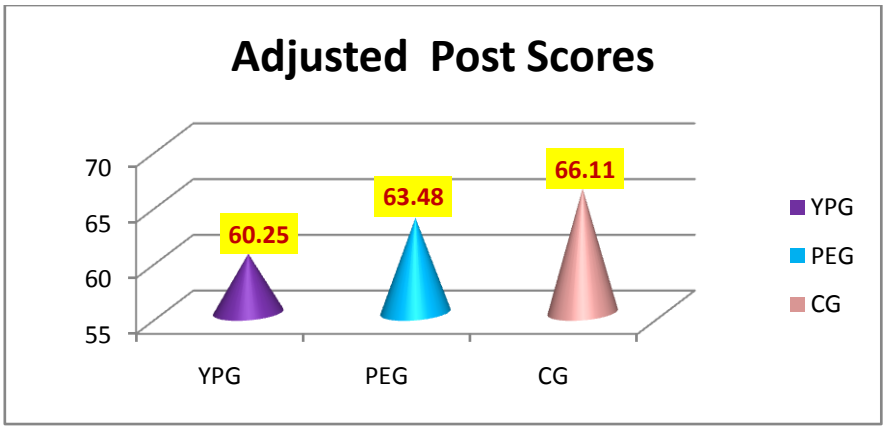
**Table I.** Analysis of Covariance of Resting Pulse Rate

| Variables | Test | Group Means | | | Source of variance | Sum of square | df | Mean square | F-ratio | Significance |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Yogic practice group | Physical exercise group | Control group | | | | | | |
| RPR | Pre-test | 66.30 | 64.75 | 66.85 | B / G | 47.43 | 2 | 23.72 | 0.50 | 0.61 |
| | | | | | W / G | 2704.50 | 57 | 47.45 | | |
| | Post-test | 60.55 | 62.40 | 66.90 | B / G | 426.63 | 2 | 213.32 | 4.73* | 0.01 |
| | | | | | W / G | 2569.55 | 57 | 45.08 | | |
| | Adjusted post test | 60.25 | 63.48 | 66.11 | B / G | 344.45 | 2 | 172.23 | 22.42* | 0.00 |
| | | | | | W / G | 430.17 | 56 | 7.68 | | |

***Significant at 0.001 level** **B: Between Groups & W:Within Groups**

From table I, it could be deciphered that the pre-test mean of resting pulse rate of the three groups namely, Yogic practice group (Group-A) and Physical exercise group (Group-B), Control group (Group-C), did not differ significantly (P > 0.05). However, the post-test means of resting pulse rate of the three groups were different (P<0.001). The adjusted post-test for mean values of resting pulse rate of the three groups done by ANCOVA showed that the mean of resting pulse rate varied significantly among the three groups (P<0.001) and the results of post-hoc test revealed with help of diagram that yogic practice group (Group – A) was the best among the three as the values of resting pulse rate respectively 60.25 (per minute), were statistically significant.

**Figure I.** Diagram Representing the Adjusted Value of Resting Pulse Rate



**Discussion**

Pratima M. et al. (2008) the mean value of resting pulse rate was highly significant reduction after Three months of yogic practices. Suryanamaskar practice can be advocated to decreases resting pulse rate for patients as well as healthy individuals. Kewal Krishan and Sudhir Kumar Sharma (2009) The result of the study indicated that Resting pulse rate of yogic practices group was better than the other two groups. Rajakumar J, (2010)In terms of improved number of Physiological variables and their magnitude of improvement due to training, yogic practice. Satpal Yadav and Minu Tadang (2013) 6-week yoga asana training may be recommended to improve other physiological based performance and enhance basal metabolic rate. Mr. Sanjay R Gamit (2013) Effect of yogic practices and Interval Training on Selected Physiological & Bio-Chemical Variables was recommended that yoga shall be made a compulsory part in the physical education programmer in schools and colleges. The present study also discovered the significant response in subjects with resting pulse rate. This may recommend that yogic practice is more effective in reducing pulse rate

**Conclusion**

The designed yogic practices and physical exercises made impacts on resting pulse rate during post training assessment among the residential female University students. Statistically, the yogic practices group has proved better than the other two groups. Based on the finding, it is concluded that the designed yogic practice package could be a notable capsule training to reduce the resting pulse rate and scored normal resting heart rate (between 60 and 100 beats per minute) for performance oriented tasks owing to heath related fitness.

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