



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2024: 9(1): 384-388

© 2024 Yoga

www.theyogicjournal.com

Received: 05-01-2024

Accepted: 12-02-2024

Dr. Amandeep Singh

Associate Professor,
Department of Physical
Education, Guru Nanak Dev
University, Amritsar, Punjab,
India

Gagandeep Singh

Assistant Professor,
Department of Physical
Education, Guru Nanak Dev
University, Amritsar, Punjab,
India

Effects of Anapanasati meditation technique on physiological parameter of university students

Dr. Amandeep Singh and Gagandeep Singh

Abstract

The goal of the current study was to investigate how university students analysed the impact of the Anapanasati meditation technique on physiological markers. To achieve the goals of the study, forty university-level students from Guru Nanak Dev University in Amritsar, Punjab, India were selected in 2024. The subject's age ranges from 18 to 25. The selected students were divided into two equal groups, each consisting of twenty male students: the experimental group and the control group. The experimental group adhered to an Anapanasati meditation programme for eight weeks.

During the trial, the control group received no instruction. The selected subjects' Resting Breathing Rate were measured by counting the number of times your chest or abdomen rises over the course of one minute. Before the training session a pre-test and after the eight-week training period a post-test were conducted immediately. Statistics Techniques the "t" ratio was used to assess the pre- and post-test means for both the experimental and control groups. The findings showed that the criterion variable had a substantial difference. The difference is found due to Anapanasati meditation given to the experimental group on Resting Breathing Rate when compared to control group.

Keywords: Anapanasati meditation, resting breathing rate, and 't' ratio

Introduction

Background of meditation

The Vedic literature from ancient India provides descriptions of the meditation technique that dates back to those times. Ayurveda, sometimes known as the "Science of Life," is a comprehensive natural health care system that has its roots in ancient India's Vedic period. One of its methods is meditation.

The earliest written records of meditation come from the Hindu Vedas around 1500 BCE. The Torah also contains a description of the patriarch Isaac going to "lasuach" in a field, a kind of Jewish meditation most likely practiced around 1000 BCE. In the meantime, records of various types of meditation were made in Taoist China and Buddhist India between 600 and 400 BCE. Although the name "meditation" encompasses a wide range of approaches, if we define it more broadly as a contemplative practice that uses many strategies to focus the mind, evidence indicates that humans have been doing meditation as a spiritual practice since the beginning of time. But before these lessons were recorded in writing, Indo-Aryan sages, or rishis, had been passing them down orally for hundreds of years. According to some academics, the Vedas originated in 3000 BCE as a result of these rishis' philosophical discussions on general cosmological issues regarding the nature of existence. The creator Brahma is said to have sung the universe into existence through the Vedic hymns. During their meditation, the sages heard them, and it is thought that their transmission in Sanskrit recreated the sounds of the universe's beginnings.

Anapanasati is a Sanskrit Word which mean "mindfulness of breathing". ("Anapanasati refers to inhalation and exhalation practices which paying attention to the breath. It is the quintessential form of Buddhist meditation, attributed to Gautama Buddha, and described in several suttas. Meditation is an altered trait of consciousness that differs from wakefulness, relaxation at rest, and ordinary sleep state ^[1, 2].

The focus of breath is used by novice Anapanasati meditators to attain shallow concentration levels ^[3]. Regular meditation practice induces 'state' or short-term temporary changes that

Corresponding Author:

Gagandeep Singh

Assistant Professor,
Department of Physical
Education, Guru Nanak Dev
University, Amritsar, Punjab,
India

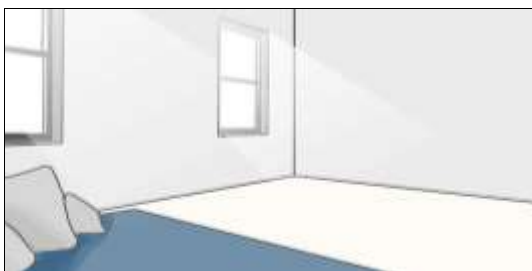
arise during or immediately after meditation [4] and 'trait' or long-lasting changes [5]. State changes in respiratory parameters have been reported in many forms of meditation: such as a reduction of respiratory rate [6], decrease in minute ventilation [7], abrupt decrement in oxygen consumption during meditation from baseline [8], increase in tidal volume (VT) [9], vital capacity [10], peak expiratory flow rate (PEFR), chest expansion and breath-holding time (BHT) and decrement in (RBR) [11].

Its practice builds mindfulness and concentration through the relaxation and stilling of body, feelings, and mind. Ultimately, according to the Buddha, meditation's goal is the attainment of Nibbana (Nirvana), the extinction of suffering [12]. The practice of breath meditation focuses on the subtle movement of the breath, so it is easily disrupted by stray noises. Buddhist instructional sutras (or suttas in Pali) recommend using abandoned buildings, deep forests, or the foot of a tree for an extended period of practice. For those of us without access to places like that, a quiet and peaceful room is a good choice. Try to use the same place daily until you become advanced enough that it is easy to enter a meditative state [13].

How to do Anapanasati meditation

(Preparing)

(Step: 1) Select a place to meditate



Look for a quiet place that inspires a contemplative attitude. The practice of breath meditation focuses on the subtle movement of the breath, so it is easily disrupted by stray noises. Buddhist instructional sutras (or suttas in Pali) recommend using abandoned buildings, deep forests, or the foot of a tree for an extended period of practice. For those of us without access to places like that, a quiet and peaceful room is a good choice. Try to use the same place daily until you become advanced enough that it is easy to enter a meditative state.

(Step: 2) Use the correct posture



The Buddha's instructions indicate that sitting with a straight back is the best position for anapanasati. Given that this practice is all about body relaxation, inner feelings of pleasure, and a still mind, the more comfortable your posture, the better.

- The usual choice is the lotus position, seated cross-legged with the right foot tucked on top of the left thigh, and the

left foot on top of the right thigh. If your body cannot accommodate this, use a comfortable cross-legged posture, or sit on a chair.

- Sit upright, with your spine straight and your head well-supported. If required, feel free to gently and mindfully lay your back against a chair, wall, or tree trunk. Tilt your head slightly downward if it is more comfortable.
- Place your hands anywhere that feels comfortable. A common choice is to place them on your lap, with both palms upward, the left cradling the right.

(Step: 3) Relax



Once you have chosen your posture, spend some time on conscious relaxation, while breathing through your nose. Observe any tension in your body and let go of it. The more mindful you are of this pleasant relaxation, the more quickly it will occur. Noticing this positive feedback will help incline your mind and heart to further presence, mindfulness and stillness.

(Step: 4) Focus on your breath



Once the mind has stilled and settled, start focusing on a point around the body where it is easiest to sense and concentrate on your breath. The tip of your nose or your upper lip is a good choice, since these are small points where you can feel the air pass. Some people may prefer the inner nose airways, the back of the mouth, the chest, or the belly.

(Step: 5) Count your breaths to guide your first efforts



This optional step is especially helpful for beginners, as it helps prevent your mind from wandering. Maintain your

focus on the point of breathing you have chosen, such as the tip of your nose. Count the breaths as follows: 1 (inhale), 1 (exhale), then 2 (inhale), 2 (exhale), and so on up to 10. Then restart the count.

(Step: 6) Fix your attention on mental signs



During the contact stage, a mental image or sign may arise, such as a bright light, mist, or wheel. At first, this is a "learning sign," unsteady and wavering. Once you notice this sign, you may fix your attention on it as breathing goes on. At first, the sign may appear vague or unsteady, but as you continue to focus on it, it may become clearer. This is a stage of deep concentration, which can last hours for an experienced meditator.

(Step: 7) Purify yourself of these emotions



By continuing to contemplate these topics, you can replace your negative emotions with positive virtues. One of the most important is detachment (Viraga), emptying your mind of worries and thoughts of the past and future.

(Step: 8) Look back at what you have lost and gained



If you have gone through all stages of anapanasati, complete the meditation by recollecting how it has led to the loss of negative emotions and the gain of new insights. Consider how the breath-driven gradual stilling of the body, feelings, thoughts and mind achieved so far are only possible due to the universal characteristic of impermanence (anicca).

(Step: 9) Practice consistently



Do it the same way every time think about even sitting in the same place. This trains and familiarizes the mind with keeping a firm applied focus. To begin, some experts recommended spending up to a week or more practicing for several hours a day without duties, so a meditation retreat is ideal. It can take several days and, for some, weeks or months before the mind has relaxed and let go sufficiently for a person to put down the mental hindrances and their mind to become bright.

Statement of the problem

The study's goal was to ascertain how meditation affected on Resting Breathing Rate among university level Students.

Research methodology

Selection of subjects

The study's goal was to determine how university students' use of the meditation technique affected their physiological parameters. Forty university students were randomly chosen as study subjects in order to meet this goal. The individuals' ages ranged from 18 to 25 years old.

Selection of variable

Independent variable

Meditation Technique.

Dependent variable

Resting Breathing Rate.

Experimental design and implementation

The chosen participants were split into two equal groups, each consisting of twenty participants, for example, an Experimental Group for meditation practice and a Control Group. For eight weeks, the experimental group practiced meditation three days a week. Control group: aside from their curriculum-required routine physical exercises, they did not participate in any extra training programmes. The physiological characteristic that was chosen as the criteria variable was the resting breathing rate. Every participant in the two groups underwent testing on a chosen criteria variable. Prior to and right after the training programme, the resting breathing rate was recorded by counting the number of times your chest or abdomen rises over the course of one minute test.

Statistical technique

To analyse any significant differences between the groups, if any, the "t" test was employed.

Level of significance

To test the level of significance that was deemed adequate, the 0.05 level of confidence was fixed.

Analysis of the data: The pre-test revealed the relevance of the variation in the experimental group's means. After the data

were processed, a dependent "t" test was performed with confidence values of 0.05.

Table 1: Analysis of t-ratio for the Pre and Post Tests of Experimental and Control Group on resting breathing rate scoring (Number of times chest or abdomen rises/One minutes)

Variables	Groups	Standard Deviation		SD Error	
		Pre	Post	Pre	Post
Resting Breathing Rate (RBR)	Control Group	1.43	1.55	0.32	0.35
	Experimental Group	1.43	0.92	0.32	0.21

Table 2: Analysis of t-ratio for the Pre and Post Tests of Experimental and Control Group on resting breathing rate scoring (Number of times chest or abdomen rises/One minutes)

Variables	Groups	Mean		Degree of Freedom	't' Ratio
		Pre	Post		
Resting Breathing Rate (RBR)	Control Group	14.95	14.75	19	1.45
	Experimental Group	14.95	10.00	19	36.60*

Significance at 0.05 level of confidence

The Table-2 shows that the mean values of pre-test and post-test of the control group on Resting breathing rate were 14.95 and 14.75 respectively. The obtained 't' ratio was 1.45, since the obtained 't' ratio was less than the required table value of 2.09 for the significant at 0.05 level with 19 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of the experimental group on resting breathing rate were 14.95 and 10.00 respectively. The obtained 't' ratio was 36.60* since the

obtained 't' ratio was greater than the required table value of 2.09 for significance at 0.05 level with 19 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in resting breathing rate. It may be concluded from the result of the study that experimental group improved in resting breathing rate due to eight weeks of meditation practice.

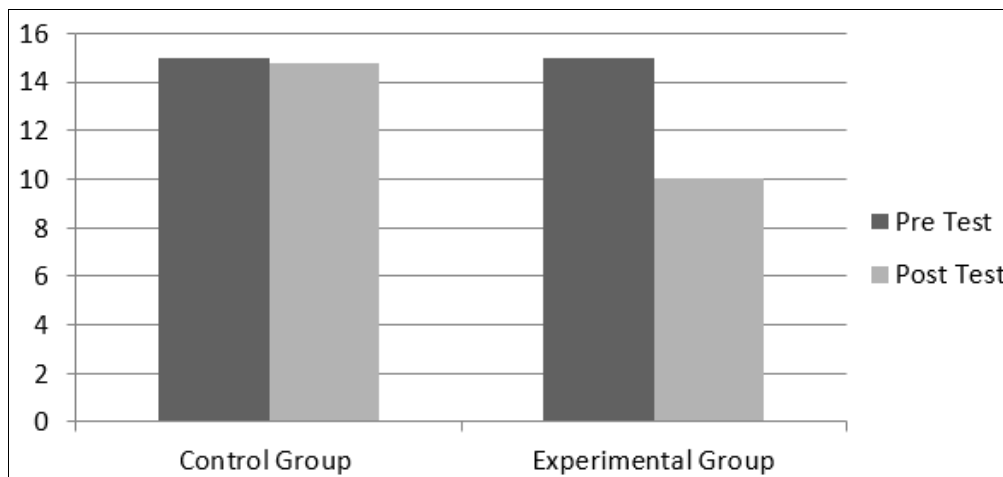


Fig 1: Bar Diagram Showing the Pre and Post Mean Values of Experimental and Control Group on Resting Breathing Rate (Number of times chest or abdomen rises/One minutes)

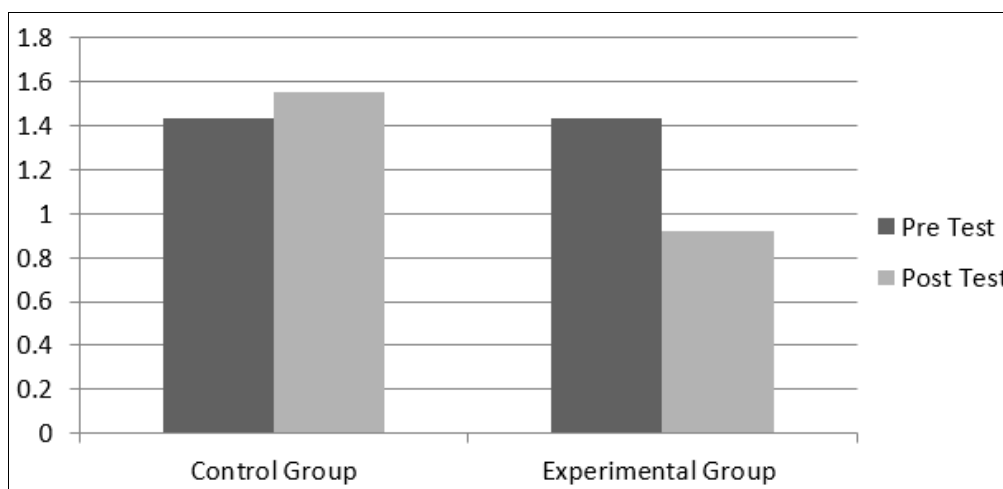


Fig 2: Bar Diagram Showing the Pre and Post Standard Deviation Values of Experimental and Control Group on Resting Breathing Rate (Number of times chest or abdomen rises/One minutes)

Discussions on findings

The result of the study indicates that the experimental group, namely meditation practice group had significantly improved the selected dependent variable, namely resting breathing rate, when compared to the control group. It is also found that the improvement caused by meditation practice when compared to the control group.

Conclusion

There was a significant difference between experimental and control group on Resting breathing rate after the training period.

There was a significant improvement in resting breathing rate. However the improvement was in favour of experimental group due to Eight weeks of meditation practice.

References

1. Vaitl D, Birbaumer N, Gruzelier J, Jamieson GA, Kotchoubey B, Kübler A, *et al.* Psychobiology of altered states of consciousness. *Psychol Bull.* 2005 Jan [cited 2024 May 11];131(1):98-127. Available from: <https://doi.org/10.1037/0033-2909.131.1.98>
2. Young JD-E, Taylor E. Meditation as a voluntary hypometabolic state of biological estivation. *Physiology (Bethesda).* 1998 May-Jun [cited 2024 May 11];13(3):149-153. Available from: <https://doi.org/10.1152/physiologyonline.1998.13.3.149>
3. Ospina MB, Bond K, Karkhaneh M, Tjosvold L, Vandermeer B, Liang Y, *et al.* Meditation practices for health: State of the research. *Evid. Rep Technol. Assess.;* c2007. p. 1-263.
4. Effects of level of meditation experience on attentional focus: is the efficiency of executive or orientation networks improved? *J Altern Complement Med.* 2007 Jul-Aug [cited 2024 May 11];13(6):651-657. Available from: <https://doi.org/10.1089/acm.2007.7022>
5. Meditation states and traits: EEG, ERP, and neuroimaging studies. *Psychol. Bull.* 2006 Mar [cited 2024 May 11];132(2):180-211. Available from: <https://doi.org/10.1037/0033-2909.132.2.180>
6. Kodituwakku S, Lazar SW, Indic P, Chen Z, Brown EN, Barbieri R, *et al.* Point process time-frequency analysis of dynamic respiratory patterns during meditation practice. *Med Biol. Eng. Comput.* 2012 Mar [cited 2024 May 11];50(3):261-275. Available from: <https://doi.org/10.1007/s11517-012-0866-z>
7. Effect of transcendental meditation on breathing and respiratory control. *J Appl. Physiol.* 1984 Mar [cited 2024 May 11];56(3):607-612. Available from: <https://doi.org/10.1152/jappl.1984.56.3.607>
8. Wallace RK. Physiological effects of transcendental meditation. *Science.* 1970 Mar 27 [cited 2024 May 11];167(3926):1751. Available from: <https://doi.org/10.1126/science.167.3926.1751>
9. Raichur RN, Kulkarni SB, Rahul RR, Aruna G, Sridevi R. Effect of meditation training on pulmonary function tests. *Sci. Technol.* 2010;2:11-17.
10. Vyas R, Dikshit N. Effect of meditation on respiratory system, cardiovascular system and lipid profile. *Indian J Physiol. Pharmacol.* 2002 Oct-Dec;46(4):487-491.
11. Ankad RB, Herur A, Patil S, Shashikala GV, Chinagudi S. Effect of short-term pranayama and meditation on cardiovascular functions in healthy individuals. *Heart Views.* 2011 Apr-Jun [cited 2024 May 11];12(2):58-62. Available from:

<https://doi.org/10.4103/1995-705X.86016>

12. Buddhadasa B. Anapanasati: Mindfulness with Breathing. Available from: http://www.dhammatalks.net/Books3/Bhikkhu_Buddhadasa_Anapanasati_Mindfulness_with_Breathing.htm
13. Anapanasati: Meditation on Breathing. Available from: http://www.vipassana.com/meditation/anapanasati_meditation_on_breathing.php