ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 01, 2024

Study of Effect of "Mindfullness meditation " on heart rate in young individuals of B.G. Nagara

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ABSTRACT

Context:. Meditation being used interchangeably with focused attention & mindful attention. A practitioner can focus intensively on one particular object called as concentrative meditation or on all the mental events that enter the field of awareness called as mindfulness meditation. Studies suggest that there is a combination of mental alertness with physiological rest during the practice of mindfulness meditation. Hence the present study was planned to find out the effect of mindfullness meditation on heart arte in young individuals of B.G.Nagara who practiced mindfulness meditation for thirty minutes daily for six weeks.

Aim: This study was conducted to find out the effect of mindfullness meditation on heart rate in young individuals of B.G. Nagara

Settings and Design: The present study was a comparative study consisting of 30 young individuals in the age group of 20-30 years.

Materials and Methods: This study was conducted in the teaching hospital of Adichunchanagiri Institute of Medical Sciences (AIMS), B.G. Nagara, Mandya after the institutional ethical clearance and written consent from each participant. Heart rate was recorded before and after practising mindfullness meditation.

Results: The parameters thus recorded was analyzed for statistical significance using Students't' test and $p < 0.05$ was considered the level of significance. Heart rate was significantly decreased at ($p < 0.001$**) in the the subjects after practicing mindfullness meditation

Conclusions: Findings of our study suggest that heart rate is decreased in individuals who practiced Mindfullness meditation daily 30 minutes for six weeks

Introduction –

Medicine deals with the outer world which includes the body, where as meditation deals with inner world or mind.[1]In recent years there has been significant uptake of meditation and other relaxation techniques as a means of maintaining good

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health. Meditation is a practice in which an individual trains the mind or induces a mode of consciousness to realize some benefit. Our Prime Minister Narendra Modi has stressed about the importance of yoga and meditation in the inaugural function of world yoga day on June 21 2015. Meditation being used interchangeably with focused attention & mindful attention. A practitioner can focus intensively on one particular object called as concentrative meditation or on all the mental events that enter the field of awareness called as mindfulness meditation .Focusing the attention on a chosen object is example of mindfulness meditation [2]. Yoga and meditation have gained importance in research at the international level with the NIH of united states setting up a separate body(allocating a budget of 127 million dollars in the year 2011) [3]. Studies on mindfullness meditation suggest that various positive psychological effects, including increased subjective well-being, reduced stress, emotional reactivity, and improved behavioral regulation. (4). Studies has shown mindfulness meditation can improve pain management outcomes among chronic pain population, [5]. Practicing mindfulness meditation mainly boost the immune system and help people recover more quickly from cold or flu[6].The study on OM meditation showed that after practicing OM meditation there was a decrease in heart rate & beta rhythm in EEG[7].

Studies suggest that there is a increase in Well-being and mindfulness scores and decrease indistress scores after the practice of mindfullness meditation[8]. Yoga & meditation have gained importance in National center for complimentary & alternative medicine (NCCAM) with the objective of meditation as alternative medicine with healing practices [9].Therefore this study was planned to find out the effect of mindfulness meditation on heart arte in young individuals of B.G.Nagara who practiced mindfullness meditation for thirty minutes daily for six weeks.

Methodology- Subjects were healthy volunteers in the age group of 20 – 30 years of B.G NAGARA. All the subjects were non- smokers and were not on any medications. Those already performing some form of yoga or breathing exercises were excluded from the study. Those with Diabetes, cardiovascular & respiratory diseases were also excluded from the study. The study was prior reviewed and approved by the Institutional ethical committee. Each subject gave a written

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 01, 2024

consent before participating in the study. A sample size of 30 subjects was calculated based on the results of a pilot study done on similar subjects.

The selected groups of subjects were explained about the mindfullness meditation and made to practice the mindfullness meditation during which the subjects focused on their breath both inhalation and exhalation daily for 30 minutes between 7am-8am, for a period of six weeks. Subjects were instructed to sit erect while performing the meditation. Heart rate was recorded manually in the radial artery between 8 - 9AM on both the occasions.

Results - The parameters thus recorded were analyzed for statistical significance using Students‘t’ test and $p < 0.05$ was considered the level of significance.Heart rate was significantly decreased at ($p < 0.001$**) after practicing mindfullness meditation

Comparison of heart rate in the subjects before & after practicing mindfullness meditation

Parameters	Before practicing mindfullness meditation	After practicing mindfullness meditation	P value
Heart rate	78 ±0.24	70 ±0.62	$p < 0.001$

Discussion –The present study showed that heart rate was significantly decreased at ($p < 0.001$**) after practicing Mindfullness meditation . In our study heart rate was significantly decreased after practicing Mindfullness meditation . This decrease in heart rate was probably could be due to, heart rate mainly depends on sympathetic and parasympathetic activity in the body. Mindfullness meditation. by reducing stress and promoting calmness thereby decreasing sympathetic activity and increasing parasympathetic activity decreases the heart rate. This decrease in heart rate is due to increased vagal tone & decreased sympathetic activity [10]. Mindfullness meditation causes the shift of autonomic equilibrium towards parasympathetic dominance because of the reduction in sympathetic activity & increase in parasympathetic activity. This modulation of ANS activity probably might have been brought the conditioning effects of Mindfullness meditation on autonomic functions, mediated through limbic system & higher area of CNS. Since the limbic system controls the ANS, reduction in limbic arousal by Mindfullness meditation may explain how Mindfullness meditation increases automatic stability

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 01, 2024

& reduces heart rate.[11]. The result of the present study was consistent with study done by Pal et al [12] .

Conclusion- Findings of our study suggest that heart rate is decreased in individuals who practiced mindfullness meditation daily 30 minutes for six weeks

Aknowledgements - -We sincerely thank the participants for participating in the study

References –

1.Anand BK.Yoga and medical sciences. Indian J. Physiol and Pharmacol 1991; 35(2):84-87.

2. Antoine Lutz, Heleen A, John D; Attention regulation and monitoring in meditation Trends Cogn Sci 2008; 12(4):163-169.

3. NCCAM (2011).Meditation: An introduction .National center of complementary and alternative medicine. Available at: www.nccam.nih.gov

4. Shian –Ling keng et al.Effects of Mindfulness on Psychological Health: A Review of Empirical Studies. Clin Psychol Rev. 2011 Aug; 31(6): 1041–1056.

5. Creswell, J. David et al. Mindfulness Training and Physical Health: Mechanisms and Outcomes. Psychosomatic Medicine April 2019 81(3):p 224-232,.

6. Mindfulness Meditation and The Immune System: A Systematic Review of Randomized Controlled Trials Black, D.S., et. al. *Annals of the New York Academy of Sciences,* 2016

7. Hirai T. EEG changes during concentrated relaxation. Psychiatria et neuroglia Japonica. 2006; 62:76-85

8. Guy W. Fincham et al. Efects of Mindfulness Meditation Duration and Type on Well-being: an Online Dose-Ranging Randomized Controlled Trial.. Mindfulness (2023) 14:1171–1182

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE 01, 2024

9. Telles S, Nagarathna R, Nagendra HR. Autonomic changes while mentally repeating two syllables-one meaningful and the other neutral. Indian Journal of Physiology and Pharmacology. 1998 Jan;42:57-63.

10.Bernardi L, Sleight P, Bandinelli G, Cencetti S, Fattorini L, Wdowczyc-Szulc J, Lagi A. Effect of rosary prayer and yoga mantras on autonomic cardiovascular rhythms: comparative study. BMJ: British medical journal. 2001 Dec 22;323(7327):1446.

11.Telles S, Raghavendra BR. Neurophysiological changes in meditation correlated with descriptions from the ancient texts. Biofeedback. 2011 Jun;39(2):56-9.

12. G.K.Pal, S.Velkumary and Madanmohan. Effect of short-term practice of breathing exercises on autonomic functions in normal human volunteers. Indian Journal of Medical Research, August 2004; 120: 115 -121