

## Effect of Yoga on Anxiety: An Interventional study

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**Abstract**— Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion & self-control. So this study was conducted to find out the effect of yoga on anxiety. This study was conducted on 200 anxiety cases having age range of 18 to 55 years. Hamilton anxiety scale was used to measure the anxiety. These cases were divide into two group randomly i.e. study group and control group. Study group was given certain set of yogic exercise. Both the groups were followed and results were compared where independent variables yoga and dependent variable Anxiety was used. Chi-square, independent t test, was used for data analysis. It was observed that Anxiety was significantly decreased after the yogic intervention ( $P=0.042S$ ). So it can be concluded that yoga can reduce perceived stress improve well-being even more significantly so its recommend to do yoga regularly.

**Keywords:** Anxiety, Yoga, Hamilton anxiety scale.

### I. INTRODUCTION

Yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression, and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.<sup>1,2</sup>

Relaxation response involves a profound sensation of calmness achieved through means such as yoga, prayer or breathing exercises (Benson, Corliss, and cowley, 2004).<sup>3</sup>

Yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression. In this respect, yoga functions like other self-soothing techniques, such as meditation, relaxation, exercise, or even socializing with friends.

Stress, fear, anxiety – if one starts counting all those instances in life when he/she has experienced these emotions, one may just lose count! Anxiety about the result of a Board exam or the reaction of parents to the report card; nervousness about the first date or a job interview – all individuals would have lived through these moments. A little bit of fear is normal; in fact, just like salt in the food, it is needed to remain disciplined, focused and dynamic. The problem starts when this fear becomes persistent and so intimidating as to start interfering with our everyday life. Then it becomes an anxiety disorder, a state of excessive uneasiness, worry, or fear of the unknown, which needs to be treated, and this is where yoga can help.

Studies reported beneficial effects of yoga on anxiety, stress reduction and general well being.<sup>4,5</sup> And it is difficult to compare studies done on different forms of yoga since benefits of yoga practice might differ by the style of the practice.<sup>6</sup>

Yoga is a physical exercise that involves different body poses, breathing techniques and meditation. The therapy may help with depression and your symptoms, such as difficulty concentrating or loss of energy, mental and emotional problems, such as stress, anxiety, or depression. By integrating stretching, strengthening, and balancing exercises, yoga for depression offers one of the best methods for elevating one's mood.

Studies have illustrated yoga's ability to combat depression through balancing brain chemistry and stress hormone levels. Through a regular yoga routine, one can pull ourselves out of the depression and rise once more to enjoy vitality and inspiration in our day-to-day live. So that yoga seems to be effective is good news for people struggling with depression.

Some people who haven't responded to traditional treatments might do well with yoga, because unlike antidepressant drugs, yoga and deep breathing target the autonomic nervous system, Streeter says. "If your autonomic nervous system is balanced out, then the rest of the brain works better". Therefore the main objectives of the present study were to investigate the clinical effects of yoga on Anxiety and to find out the efficacy of yoga and yogic breathing exercises as therapeutic intervention.

But yoga alone should not be considered as the only treatment option as it is ethical to deprive the individual from their regular treatment. So in this study, study group was given complementary yogic exercise with proper medication.

## II. METHODOLOGY

A hospital based intervention study was conducted on 200 anxiety cases at SMS Medical College and Hospital, Jaipur (Rajasthan) India.

For this study anxiety cases as per Hamilton anxiety scale<sup>7</sup> were selected who were in age range of 18 to 55 years among who has attended at Psychiatry OPD of SMS Medical College, Jaipur (Rajasthan) India. General information of all the cases were collected on pre designed semi structured questionnaires. Cases that either have done yoga before or not able to follow instruction for yoga were excluded from study.

Formal permission was taken from in charge of the hospital to conduct the study. The informed consent was taken from every individual. The respondent were briefed on the scope of the study and confidentiality and anonymity was assured.

These cases were randomly divided into two groups i.e. 100 in study group and 100 in control group. Cases in study group were instructed for yogic exercise daily along with the usual medication. Participants of study group were instructed in a 14 days intensive training program which they practiced daily for 3 months. The control group was instructed to relax in an armchair each day during the same period. Both the groups were followed for 3 months. Both the group was compared on various clinical grounds as per structured questionnaires and checklist to assess the effect of yoga in both the groups.

Analyses were done accepting yoga as independent variables and anxiety as dependent variable. Data was collected through cross sectional survey on the subjects recruited randomly and interview. Hamilton anxiety scale was used to measure anxiety by Hamilton which contains 14 questions. Each item is scored on a scale of 0 (not present) to 4 (severe) with a total score range 0 to 56. Interpretation was Higher the score observed the worse the Subjective well-being and vice versa

**Statistical analyses:** Statistical analyses were done using computer software SPSS version 20 (trial version). The qualitative data were expressed in proportion and percentages and the quantitative data expressed as mean and standard deviations. The difference in proportion was analyzed by using Chi square test and the difference in means were analyzed by using student 't' Test. Significance level for tests were determined as 95% ( $P < 0.05$ ).

### III. RESULTS

Study and control groups were comparable in terms of age and sex. Mean age among the intervention and control group was observed  $27.84 \pm 9.869$  (16 to 51) years and  $25.40 \pm 9.497$  (14 to 52) years respectively. The difference between two groups was not found significant ( $P = 0.076$ ). Likewise, sex wise distribution between both groups was also not found significant ( $P = 0.88$ ). (Table 1)

**Table 1**  
**Age and sex wise comparison of Study and Control group**

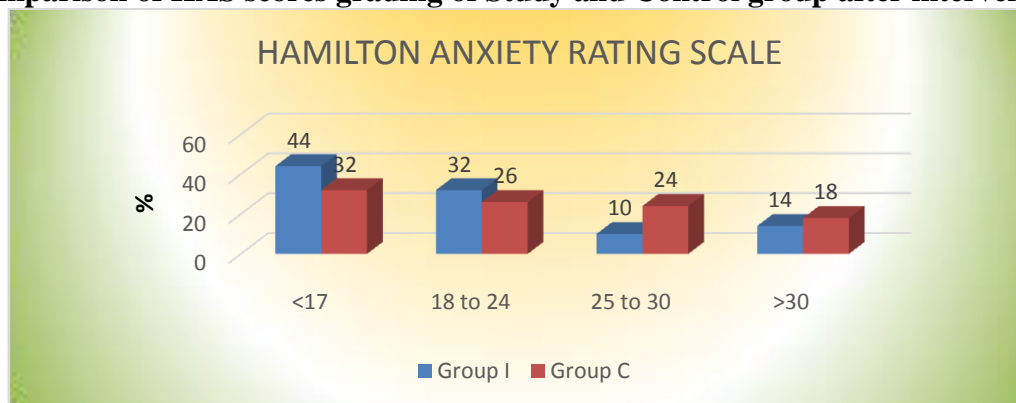
Variables		Study Group	Control Group	P value
Age	Mean (in Years)	27.84	25.4	't' = 1.782 at 198 DF P = 0.076 NS
	SD (in Years)	9.87	9.49	
	Age Range (in Years)	16-51	15-52	
Sex	Male	58	58	$\chi^2 = 0.021$ at 1DF P = 0.886 NS
	Female	42	42	

Hamilton Anxiety Rating Scale scores among the intervention and control group were found  $17.85 \pm 10.386$  (0 to 43) and  $21.73 \pm 10.247$  (1 to 72) respectively. This difference was found with significant difference ( $P = 0.008$ ). Hamilton Anxiety Rating Scale scores were found significantly lower in study group than control group. (Table 2 & Figure 1)

**Table 2**  
**Comparison of Hamilton Anxiety Rating Scale scores of Study and Control group after intervention**

HARS Scores	Study Group (N=100)	Control Group (N=100)	P value
Mean	17.85	21.73	't' = -2.659 at 198 DF P = 0.008 S
SD	10.386	10.247	
Minimum	0	1	
Maximum	43	72	

**Figure 1**  
**Comparison of HAS scores grading of Study and Control group after intervention**



#### IV. DISCUSSION

The present study was to assess the clinical effects on the Anxiety and subjective well beings with main objectives were to investigate the clinical effects of yoga on Anxiety and evaluate the efficacy of yoga and yogic breathing exercises as therapeutic intervention. Both groups were comparable as per age and sex. After intervention of yoga it was observed in this study that the proportion of the cases were significantly in lower range of anxiety in intervention group than control group. This clearly shows that yoga practice leads to a significant decrease of Anxiety level.

These results are in agreement with those reported by Brown RP et. al (2005 Feb & Aug), Pilkington K, et. al (2005), Gupta et. al (2006), Krisanaprakornkit T et. al (2006), Smits et. al (2006), Jadhav et. al (2009), Field T et. al (2013) and Newham JJ et. al (2014). Similar observations were observed by Da Silva et. al,<sup>17</sup> who found better result of yoga in treatment of mood and anxiety disorder.

Shashi G et. al,<sup>18</sup> Sharma I,<sup>19</sup> Khalsa SB<sup>20</sup> and Smith C et. al<sup>21</sup> also reported yoga as effective techniques in the management of anxiety. This was also in resonance to this study.

Kirkwood G, et. al (2005) and Sharma M et. al (2013) also found the similar observation in their systemic review. Gupta et al. (2006) also noted that Naturopathy and yoga practices promote quality of life.

So yoga therapy's emphasis on methods of coping provides techniques for dealing with stress and anxiety and is usually experienced early in the therapeutic process providing the desire for real change. The results support with other research into yoga and concepts related to psychological happiness however, the present state of research into yoga as a form of therapy and rehabilitation is still in its preliminary stages. Yoga's short-lived benefits are difficult to define and evaluate in a research setting. Investigators investigating the yoga's role in rehabilitation must recognize the possibility of a pattern clash and the first essential step must be a thorough examination of the beliefs, models and paradigms that the researchers bring to the investigation. Along with this goes the need for a willingness to be open to the possibility that yogic practices may represent systems and paradigms that, although different, are as sophisticated as current scientific models.

#### V. CONCLUSION

This study concluded that there is significant decrease in Anxiety levels after the intervention of yoga.

## CONFLICT OF INTEREST

None declared till now.

## REFERENCES

- [1] Desikachar K, Bragdon L, Bossart C. The yoga of healing: Exploring yoga's holistic model for health and well-being. *Int J Yoga Ther.* 2005;15:17-39.
- [2] Kolasinski SL, Garfinkel M, Tsai AG, Matz W, Dyke AV, Schumacher HR. Iyengar yoga for treating symptoms of osteoarthritis of the knees: A pilot study. *J Altern Complement Med.* 2005;11:689-93.
- [3] Lundberg U & Melin, B.: Stress in the development of musculoskeletal pain. In *Avenues for the prevention of chronic musculoskeletal pain and disability* Edited by: Linton S. Amsterdam, Elsevier Science; 2002:165-179
- [4] Lavey R, Sherman T, Mueser KT, Osborne DD, Currier M, Wolfe R; The effects of yoga on mood in psychiatric inpatients. *Psychiatric rehabilitation journal* 2005, 28(4):399-402.
- [5] Ray US, Mukhopadhyay S, Purkayastha SS, Asnani V, Tomer OS, Prashad R, Thakur L, Selvamurthy W; Effects of yogic exercises on physical and mental health of young fellowship course trainees, *Indian J PhysiolPharmacol* 2001, 45(1):37-53.
- [6] Cowen VS & Adams, T.B: Physical and perceptual benefits of yoga asana practice: results of a pilot study. *Journal of Bodywork and Movement Therapies* 2005, 9:211-219
- [7] Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959; 32:50-55
- [8] Brown RP, et al. "SudarshanKriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression: Part I—Neurophysiologic Model," *Journal of Alternative and Complementary Medicine* (Feb. 2005): Vol. 11, No. 1, pp. 189-201.
- [9] Brown RP, et al. "SudarshanKriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression. Part II—Clinical Applications and Guidelines," *Journal of Alternative and Complementary Medicine* (Aug. 2005): Vol. 11, No. 4, pp. 711-17.
- [10] Pilkington K, et al. "Yoga for Depression: The Research Evidence," *Journal of Affective Disorders* (Dec. 2005): Vol. 89, No.1-3, pp. 13-24.
- [11] Gupta, N., Khera, S., Vempati, R.P., Sharma, R., & Bijalani, R.L. (2006). Effect of yoga based life style intervention on state and trait anxiety. *Indian Journal of Physiology and Pharmacology.* 50, 41-47.
- [12] Krisanaprakornkit T, Krisanaprakornkit W, Piyavhatkul N, Laopaiboon M. Meditation therapy for anxiety disorders. *Cochrane Database Syst Rev.* 2006;(1): CD004998.
- [13] Smits JA, Zvolensky MJ. Emotional vulnerability as a function of physical activity among individuals with panic disorder. *Depress Anxiety.* 2006;23(2):102-106.
- [14] Jadhav, S. G. and Havalappanavar, Effect of Yoga Intervention on Anxiety and Subjective Well-being N. B. Karnatak University, Dharwad, India. *Journal of the Indian Academy of Applied Psychology*, January 2009, Vol. 35, No.1, 27-31.
- [15] Field T, Diego M, Delgado J, Medina L. Yoga and social support reduce prenatal depression, anxiety and cortisol. *J Bodywork MovTher.* 2013 Oct;17(4):397-403.
- [16] Newham JJ, Wittkowski A, Hurley J, Aplin JD, Westwood M. Effects of antenatal yoga on maternal anxiety and depression: a randomized controlled trial. *Depress Anxiety.* 2014 Aug;31(8):631-640
- [17] Da Silva, T. L., Ravindran, L. N., & Ravindran, A. V. (2009). Yoga In The Treatment Of Mood And Anxiety Disorder: A Review. *Asian Journal of Psychiatry*, 2(1), 6-16
- [18] Sahasi G, Mohan D, Kacker C. Effectiveness of yogic techniques in the management of anxiety. *J Personality Clin Stud.* 1989;5(1):51-55.
- [19] Sharma I, Azmi SA, Settiwar RM. Evaluation of the effect of pranayama in anxiety state. *Alternative Medicine.* 1991;3:227-235.
- [20] Khalsa SB, Butzer B, Shorter SM, Reinhardt KM, Cope S (2013) Yoga reduces performance anxiety in adolescent musicians. *Altern Ther Health Med* 19: 34-45.
- [21] Smith C, Hancock H, Blake-Mortimer J, Eckert K (2007) A randomized comparative trial of yoga and relaxation to reduce stress and anxiety. *Compliment Ther Med* 15: 77-83.
- [22] Kirkwood G, et al. "Yoga for Anxiety: A Systematic Review of the Research," *British Journal of Sports Medicine* (Dec. 2005): Vol. 39, No. 12, pp. 884-91.
- [23] Sharma M, Haider T. Yoga as an alternative and complementary therapy for patients suffering from anxiety: A systematic review. *Journal of Evidence-Based Complementary & Alternative Medicine [Internet]* 2013 Jan;18(1):15-22. [cited 2015 May 29].