



Hatha Yoga Exercises Effects on Reducing Anxiety in Women

Fariba GhasemiNejad^{1*}, Reza Fallahchai² and Mahin Askari³

¹Department of Clinical Psychology, Islamic Azad University, Science and Research Branch, Hormozgan, Iran.

²Hormozgan University, Bandar Abbas, Iran

³Mother & Child Welfare Research Center, Hormozgan University of Medical Sciences, Bandar Abbas, Iran

*Corresponding author's e-mail: azadbnd.pub@gmail.com

ABSTRACT: The incidence of anxiety in recent decades has grown and researchers are looking for non-pharmaceutical and non-invasive treatment for it. The exercises of hatha yoga are considered as a complementary medicine alternative. This study was conducted to determine the effectiveness of yoga on anxiety reduction in women. This study has quasi-experimental design of a pre-test and post-tests type with a control group. In these study forty persons was considered as statically sample. After filling the characteristics' questionnaire, thirty persons in the age range of 24-45 identified eligible to enter in study and were divided into two groups using matched randomly method, then by the simple random sampling method, one selected as experimental group and the other group was considered as control group. Subjects in the experimental group exercised in 24 sessions over 8 weeks (three sessions per week for an hour) first level exercises of Hatha Yoga that includes instructor techniques such as stretching, breathing and relaxation practice under the supervision of an expert. Controls were placed on a waiting list and they read about the benefits of yoga. Inventory data by demographic characteristics and DASS-21 questionnaire were collected in two steps (before and after intervention) and analysed using statistical software SPSS 18 and descriptive and inferential statistics (analysis of covariance). The mean anxiety scores in the experimental group showed a significant difference before and after intervention. But this difference was not significant in the control group. According to the findings, two months Hatha yoga practice was effective in reducing anxiety and can be considered as complementary therapy for the treatment of anxiety.

Key Words: Hatha Yoga, Stress, Women

INTRODUCTION

According to the World Health Organization, anxiety is one of the largest mental health problems [1], and advances in the field of therapeutic interventions and pharmacotherapy has not been able to effectively prevent the increasing rate of this dysfunction [2].

Anxiety disorders are the most common psychiatric disorders in the general population in the United States and other studied country. Moreover frequent studies show that anxiety will cause significant disorders and as a result demand more health care. Anxiety disorders are the most common psychiatric disorders in the general population. In the United States approximately 30 million people suffer from this disorder and the ratio of women to men is nearly twice. Anxiety disorders are associated with many side effects that are often chronic and resistant to treatment. These disorders can be considered as a family of disorders with distinct and yet interrelated considered [3].

The results of the national survey of Iranians mental health initiatives in 2010-11, including population of one million five hundred thousand people in Iran, which covered about three percent of the total population, showed that the prevalence of anxiety disorders in Iran is more than other countries, and anxiety disorders are the most common mental disorders, and 16 percent of the population suffer from this disorder. Also, these types of disorders are twice in women than men [4]. With regard to the issues and problems of people, anxiety is considered as one of the main barriers to mental health and addressing them is essential. Anxiety also endangers the mental health, and affects life satisfaction [5], and leads to a loss of happiness in people.

So given to problems such as anxiety is very important, that is why the researchers in this regard seeking for non-invasive and drug ways to treat this disorder and in this way yoga as a complementary treatment is taken into consideration [6]. Yoga is one of the most effective ways of reducing psychological problems in many countries around the world. In Iran, yoga recently accepted more widely among people, especially among women [7] and this issue makes consideration to this type of treatment more evident.

Many interventions have been made in reducing anxiety and stress. One type of intervention is teaching yoga. Yoga is a Sanskrit word which means unity of mind and body. Five thousand years ago, Yoga has been used

in Eastern societies and Western countries have been recently considered it, so that in the United States of America, it is one of the most important methods of complementary medicine [8].

Due to adverse effects of drugs in the treatment of anxiety, researchers are trying to find non-medical and non-invasive method as a cure for this disorder. On the other hand, since the 1970s, yoga, meditation and other stress reducing techniques have been studied as possible and alternative medicine therapies to treat anxiety and depression and used in recent decades to a large extent [9, 10].

Shashi, in his article titled "Evidence-Based Medicine Yoga Benefits Applications" has listed medical conditions that yoga has a positive effect in improving them: anxiety, arthritis, asthma, ADHD more attention deficit hyperactivity, heart disease, depression, diabetes, epilepsy, hypertension, insomnia, irritable bowel syndrome, low back pain and menopause.

Previous research advocates that yoga have been successful in reducing stress and anxiety. Yoga enhances physical and mental welfare and this improvement helps in mental status [2] self-esteem. Given that mental health is influenced by factors such as anxiety, research in this area become important. On the other hand, the extents of our knowledge are based on very few studies that have been made on the effectiveness of yoga in reducing anxiety.

Given the important role of mental health and human mental power enhancement to deal with the problems of today's world, Research on the effectiveness of Hatha yoga exercise on anxiety issues is considered, so it is important to study and research in this field, but, based on our knowledge, very limited research have been done in the field of the effectiveness of yoga in our country. The results of this research can be little leaf on the trees and adds a small step toward improving the health of women through the study of the effect of yoga on anxiety reduction practice. Little research conducted in this field reveals the need to conduct research.

MATERIALS AND METHODS

This study has quasi-experimental design of a pretest and posttest type with a control group. In these study forty persons was considered as statically sample. After filling the characteristics' questionnaire, thirty persons in the age range of 24-45 identified eligible to enter in study and were divided into two groups using matched randomly method , then by the simple random sampling method, one selected as experimental group and the other group was considered as control group. Subjects in the experimental group exercised in 24 sessions over 8 weeks (three sessions per week for an hour) first level exercises of Hatha Yoga that includes instructor techniques such as stretching, breathing and relaxation practice under the supervision of an expert. Controls were placed on a waiting list and they read about the benefits of yoga.

Criteria to enter to the study: No history of drug abuse or psychoactive drugs such as amphetamines, or taking or leaving benzodiazepines; not suffering from severe mental disorder such as mood disorders or schizophrenia and absence of disorder caused by hyperthyroidism or organic mental disorder .

Being a beginner in yoga teaching Research tools:

Demographic characteristics: Form of the personal data of subject included information such as age, gender, marital status, occupation, education level, not using tranquilizers, no history of serious illness and thyroid disorders, lack of education, drug use and beginner yoga. To measure subjects' anxiety, short form of depression, Anxiety and stress scale, 21 DASS- were used. Depression, anxiety and stress DASS-21 was developed in 1995 by Laybvand and Laybvand. This scale has two forms: short form has 21 expression that each has been evaluated any mental structures of "depression", "anxiety" and "stress" by seven different statements.

Reliability and validity of the questionnaire has examined by Samani and Jokar, and the retest reliability for depression, anxiety and stress were respectively, 0.80, 0.76 and 0.77 and the alpha for depression, anxiety and stress are reported, respectively, 0.81,0.74 and 0.78.

The reliability of the questionnaire, the Cronbach's alpha coefficients for the subscales of DASS depression and anxiety determined more than 0.70. As a result, the reliability of the scale is good. Cronbach's alpha coefficient for stress scale is 0.68 and this value of reliability is considered acceptable because its amount is close to 0.7.

RESULTS

Average age group of 15 people in each experimental and control groups was 30 to 35 year and subjects were in the age range of 24 to 45 years. Results of demographic variables showed that both experimental and control groups were matched in terms of age and in other characteristics such as marital status and education were close together (Table 1). Results showed that moderate anxiety scores in the experimental group were lower than those of the control group and the difference between pre-test and post-test scores of the experimental group were statistically significant. In other words, doing hatha yoga exercises is effective in reducing anxiety in women. (Tables 2 and 3).

Table 1. Demographic characteristics of the study population

Variables	Experimental Group (n=15)		Control Group (n=15)		Sum (n=15)		
	Number	Percent	Number	Percent	Number	Percent	
Age group	24 - 29	5	33.3	5	33.3	10	33.3
	30 - 35	5	33.3	5	33.3	10	33.3
	36 - 40	4	26.7	4	26.7	8	26.7
	41 - 45	1	6.7	1	6.7	2	6.7
Marriage	Single	5	33.3	6	40	11	36.7
	Marriage	10	66.7	9	60	19	63.3
Education	Diploma	3	20	1	6.7	3	10
	Associate Degree	2	13.3	10	66.6	18	60
	Expertise	8	53.4	3	20	5	16.7
	MA	2	13.3				
Job	Employed	13	86.8	14	93.3	27	86.6
	Unemployed	2	13.2	1	6.7	3	13.2

Table 2. Descriptive characteristics of pre-test, post-test anxiety scores and the modified covariance

Anxiety	Group	Sample Volume	Pretest scores		Posttest scores		Adjusted scores	
			Mean	SD	Mean	SD	Mean	SD
	Experimental	15	18.13	7.47	12.47	7.75	8.80	0.89
	Control	15	9.33	4.45	9.53	4.7	13.20	0.89

Table 3. Results of covariance analysis related to anxiety scores

Anxiety	Source of variation	Sum of squares	Degrees of freedom	Mean squares	F value	P value
	Experimental Group	99.54	1	99.54	10.19	0.004
	Error	263.76	27	9.77		
	Error	376.38	27			

According to the results shown in Table 4, there is no significant difference between pre-test and post-test anxiety in the control group, ($p > 0.05$).

Table 4. Results of paired t-test to compare pre-and post-test scores (anxiety) in the control group.

Variable	Pretest scores mean	Post test scores mean	Mean difference	Criterion t	Freedom degree	P value
Anxiety	9.33	9.53	0.2	0.64	14	0.531

DISCUSSION

The results of the present study indicate reduction of anxiety by the practice of Hatha Yoga in the experimental group. The findings of the research confirmed by the results of Rezaei and Ghanei [5], Rahimi and Bavaghar [4]. In all of listed research, practicing yoga reduces anxiety. Although in some of these studies, the anxiety caused by a condition or situation (such as pregnancy, surgery and exam) or by the difficult disease.

To explain the theoretical basis of the findings of this study can be said that Taiseven et al. have emphasized on the role of physical activity in improving mental health. The results of their study showed that increased physical activity reduces symptoms of anxiety and depression. Furthermore, employment of physical activity is considered as a very important factor in mental health [7].

National Center of Complementary and Alternative Medicine ((NCCAM), based on clinical experience stated by practitioners of Yoga, established National Institutes of Health (NIH) and approved yoga as a mind-body reputable intervention. Nevertheless there is physiological control evidence to support this theory. Autonomic nervous system (ANS) is a branch of the peripheral nervous system that regulates involuntary movements and divided into two categories: the sympathetic nervous system and parasympathetic nervous system that have polar functions. Sympathetic nerve stimulation causes a response to anxiety and increase breathing, heart rate, blood pressure and blood glucose levels and the relaxation response, while the parasympathetic nervous caused decrease in heart rate, blood pressure, blood glucose and breathing levels.

Vagus nerve cells that form from the brain and spinal cord is responsible for stimulation of the parasympathetic neurons and secretion of the neurotransmitter Acetylcholine and delayed sinus discharge rate and consequently causes the heart rate decrease [2]. Reduction in sympathetic nervous system activity and increased parasympathetic nervous activity result in therapeutic response such as improving mood and reducing stress and anxiety and emotional adjustment [3].

Raub believed that Yoga affects the manner of breathing and helps to control the flow of energy, push out toxic air; enter more oxygen to the body and eventually cause body becomes stronger.

Breathing ways in Yoga has large variety and the breath can be manipulated in many ways such as deep breathing, abdominal breathing, keep breathing in different parts of the respiratory cycle, alternating nostrils [1].

Voluntary control of breathing activates the parasympathetic nervous system and reduces stress, blood pressure and modulates emotions and potentially increases the level of awareness [4].

From a psychological perspective, the practice of Yoga helps to reduce stress adaptation and mitigation by limiting states of mind and spirit, and yoga by reducing cortical arousal, gifts relaxation to body and mind, and therefore leads to reduced anxiety and depression [2].

Bad breathing is a common cause of anxiety. People could not breathe correctly in a state of anxiety and therefore respiration often done as a superficial and incorrect mannerso that person not to fully discharge carbon dioxide and enough oxygen is not replace. Therefore anxiety levels will rise more and more. With pranayama practice, (control of respiration) person learns to breathe consciously and voluntarily.

Despite the research on the effectiveness of yoga exercises to reduce anxiety in this research and other related research , the impact of these practices on reducing stress and increasing happiness when these exercises is quitted is unknown for us and the impact of this exercise may be provisional. However, it can be said that 24 hatha yoga sessions (3 sessions per week for 8 weeks) can be effective in reducing anxiety and increasing the happiness.

So it can be used as a way to reduce anxiety and to be considered as complementary and alternative medicine. The limitation of this research study is that it has been conducted on the women samples and the results cannot be generalized to the entire population. Therefore, it is recommended that similar studies to be done in the target population of men. This study evaluated the effect of yoga training in 24 sessions (3 sessions per week for 8 weeks) on anxiety reduction and recommended similar studies to evaluate the effectiveness of yoga exercises with more time. It is recommended that similar studies be done to sample more results interoperability. According to the present results and the results of other studies, because of the positive effects of yoga in recent decades, people have been doing it to reduce or even prevent anxiety. The exercise is simple, fun, low-cost, and it can be used to help improvement of people health.

REFERENCES

1. Emami Moghadam, S. 2010. The investigation of effectiveness of yoga in reducing anxiety and depression in spouses of veterans in Shiraz. Unpublished master's thesis. Islamic Azad University Science and Research Branch of Tehran.
2. Burns, D. 1999. From bad to good (translated by Mehdi Qrachi daghi). 2010. Tehran: Asim publication.
3. Khosravi. A., Najafi, F., Rahbar, M., Motlagh, E. & Kabir, M.J. 2010. Landscape indicators of health in Iran. Center for Development and Health Promotion. Tehran : Secretariat of Applied Research
4. Rahimi, E. & Bavaghar, S. 2010. Comparision of the Effects of Hatha yoga and fitness exercise on anxiety and depression in women. The Journal of Qazvin University of Medical Sciences and Health Services, No. 59, pp. 48.
5. Rezaei, K. & Ghanei, R. 2012 the effect of yoga on anxiety in breast cancer patients undergoing chemotherapy. Jntashapyr Quarterly, Year IV, No. 1, pp. 41.
6. Sadvok, B. & Sadvok, V. 2007. Psychiatric Summary (translated Farzin Rezaei). 2012. Tehran: Arjmand Publication.
7. Sarkhosh, M. 2011. Effects of yoga on children and mental imagery test anxiety. Unpublished master's thesis. Marvdasht Azad University, School of Education and Psychology.
8. Shiraqakusanai, S. 2007. Relaxation effect on competitive state anxiety in adolescent wrestlers of Ghaemshahr .Not published Master's thesis. Islamic Azad University of Karaj, Faculty of Physical Education and Sports Science
9. Matin Rad, M. 2010. Comparison of relaxation techniques and meditation in reducing anxiety students. Unpublished doctoral dissertation. Islamic Azad University, Science and Research.
10. Moinifard, H. & Janfada, N.2012 .Effect of practicing yoga on Family Relations (Case Study: Yazd sport clubs). Journal of Sport Management, No. 13, pp. 80.