

## Brief Communication

# The Effect of Yoga on Stress, Anxiety, and Depression in Women

### Abstract

**Background:** In recent decades, several medical and scientific studies on yoga proved it to be very useful in the treatment of some diseases. This study was conducted to investigate the effects of yoga on stress, anxiety, and depression in women living in Ilam, Iran. **Methods:** This study is a quasi-experimental study with pre-post test. To collect data, the questionnaire of DASS-21 (Depression Anxiety Stress Scale-21) was used. For eligible samples, hatha yoga exercises and training sessions were held for 4 weeks (3 time/weeks; 60-70 min each) by a specialist. Data were analyzed using SPSS version 20. **Results:** 52 women with a mean age of  $33.5 \pm 6.5$  were included for analysis. Depression, anxiety, and stress decreased significantly in women after 12 sessions of regular hatha yoga practice ( $P < 0.001$ ). **Conclusions:** Yoga has an effective role in reducing stress, anxiety, and depression. Thus, it can be used as complementary medicine.

**Keywords:** Anxiety, depression, stress, women, yoga

### Introduction

Complementary medicine refers to a category of treatments and interventions that have not been raised in modern medicine.<sup>[1]</sup> Yoga is a Sanskrit word meaning unity of mind and body, which has been used in Eastern societies since 5000 years ago and has recently received much attention from Western countries.<sup>[2]</sup> In recent decades, several medical and scientific studies on yoga proved it to be very useful in the treatment of some diseases.<sup>[3]</sup> Studies have demonstrated effect of yoga for many conditions, including multiple sclerosis,<sup>[4]</sup> asthma,<sup>[5]</sup> irritable bowel syndrome,<sup>[6]</sup> lymphoma,<sup>[7]</sup> hypertension,<sup>[8]</sup> drug addiction,<sup>[9]</sup> osteoarthritis,<sup>[10]</sup> and mental health issues.<sup>[11]</sup>

Increased stress, depression and anxiety are the features of modern lifestyle.<sup>[12]</sup> Due to the adverse effects of drugs in the treatment of anxiety and depression, and in some cases their lack of effectiveness, researchers seek nonpharmacological and noninvasive treatment for these disorders.<sup>[13]</sup> Yoga exercises was improved the variables of self-description, psychological status, and the quality of life.<sup>[14]</sup> Researches suggest that yoga as an intellectual and mental exercise, improves health feeling.<sup>[15]</sup> Furthermore, yoga can improve

the psychological conditions for monitoring and managing stress and negative emotions, increase positive emotions, and help mental balance.<sup>[11]</sup> However, despite the popularity and the positive psychological and physiological effects of yoga, it is not widely studied to find how much it really prevents and treats mental disorders. Research in this area is limited in Iran. This study was conducted to investigate the effects of yoga on stress, anxiety, and depression in women living in Ilam from Iran, during 2014 to 2015.

### Methods

#### Design and ethics

This study is a quasi-experimental study with pre-post test that was approved by the Ethics Committee of the Ilam University of Medical Sciences. The population consisted of all women admitted to yoga club in the city of Ilam in 2014–2015.

#### Inclusion and exclusion criteria

Inclusion criteria were educated, nonathlete and nonpregnant women with the ability to perform hatha yoga exercises without inability to exercise. Exclusion criteria included refusal or unwillingness to perform yoga continuously, simultaneous exercise, and receiving medication for mental disorders.

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### Assessment tools and management

To collect data, the questionnaire of DASS-21 (Depression Anxiety Stress Scale-21) was used. The validity and reliability of this standard questionnaire was examined by Sahebi *et al.* and Cronbach's alpha was estimated 0.7, 0.66 and 0.76 for depression, anxiety, and stress, respectively. in a study entitled "validation of depression anxiety and stress scale for an Iranian population".<sup>[16]</sup> Each of the above mentioned states are assessed with seven questions. Hatha yoga exercises and training sessions were held 3 time/weeks; 60-70 min each (postures, breathing techniques, meditation) by a specialist. Before the intervention, questionnaires were completed by women. The intervention lasted 12 sessions. At the end of the 12<sup>th</sup> session, the questionnaire of DASS-21 was again completed by women.

### Statistical procedures

The obtained data were analyzed using SPSS version 20 (IBM, Armonk, NY, USA). According to the established normality, paired sample *t*-test was used for comparing the results before and after the intervention. The threshold of significance was set at  $P < 0.05$ .

### Results

The total eligible sample consisted of 52 women with a mean age of  $33.5 \pm 6.5$  years. Other demographic characteristics are shown in Table 1.

The difference between mean scores of depression, anxiety, and stress before and after 12 sessions of regular hatha yoga practice was statistically significant [Table 2].

### Discussion

The present study showed that 12 sessions of intervention as regular hatha yoga exercise significantly reduced stress, anxiety, and depression in women.

In other studies, including Tayyebi *et al.*, among hemodialysis patients,<sup>[17]</sup> Rahnama *et al.*, among multiple sclerosis patients,<sup>[15]</sup> Javnbakht *et al.*, among women living in Mashhad,<sup>[18]</sup> and Gong among pregnant women,<sup>[19]</sup> the significant positive effects of yoga in reducing stress, anxiety, and depression have been confirmed. In the study of Streeter *et al.*,<sup>[20]</sup> it was found that greater improvement in mood and greater decreases in anxiety during 12 week of yoga intervention compared to walking group. Oken *et al.*<sup>[4]</sup> did not observe any significant effect of yoga on improvement in mood in patients with MS, the limitation of this study is the small number of intervention sessions (one session per week).

Dalgas *et al.* proved that the nature of yoga is controlling the mind and central nervous system and unlike other sports, it has a moderating effect on the nervous system, the hormonal emissions, physiological factors, and regulation of nerve impulses; therefore, it can be effective in improving depression and mental disorders.<sup>[21]</sup>

**Table 1: Demographic characteristics of the women**

Variable	n (%)
Age	33.5 $\pm$ 6.5*
Marital status (%)	
Single	18 (34.6)
Married	34 (65.4)
Job (%)	
Unemployed	10 (19.2)
Housewife	19 (36.5)
Employed	9 (17.3)
Retired	2 (3.8)
Other jobs	12 (23.1)
Level of income (%)	
Low	6 (11.5)
Average	36 (69.2)
High	10 (19.2)
Education (%)	
Primary	3 (5.8)
Diploma	13 (25)
University degrees	36 (69.2)

\*Mean $\pm$ SD. SD=Standard deviation

**Table 2: A comparison of the mean scores of stress, anxiety, and depression before and after the intervention of 12 sessions of regular hatha yoga practice session (n=52)**

Variable	n	Mean $\pm$ SD	Correlation	P
Depression				
Before intervention	52	6.5 (5.5)	0.8	0.001
After intervention	52	5.1 (5)		
Anxiety				
Before intervention	52	5.7 (4.5)	0.7	0.0001
After intervention	52	4.2 (4)		
Stress				
Before intervention	52	7.8 (4.8)	0.7	0.0001
After intervention	52	5.6 (4.2)		

SD=Standard deviation

One limitation of this study was that only the women were studied and since there were no yoga clubs for men, they have not been studied in this research.

### Conclusions

Yoga has an effective role in reducing stress, anxiety, and depression that can be considered as complementary medicine and reduce the medical cost per treatment by reducing the use of drugs. Given that, the reason behind the effect of yoga on stress, anxiety, and depression is not clear for us and may be transient, and it is suggested that future studies are done to investigate the long-term effect of yoga on stress, anxiety, and depression.

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## Conflicts of interest

There are no conflicts of interest.

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