

Short Communication

Role of yoga in modifying anxiety level in women

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Abstract

Anxiety leads to derangement in physical and mental health. Anxiety levels are more in full time housewives than working women. There is a need for simple, easy treatment for anxiety to alleviate the burden on health caused by anxiety. Yoga is among the top ten complementary and alternative medicine therapies. Our study aimed to determine the anxiety levels in apparently healthy full time housewives and to study the effects of Yoga on anxiety levels among them. Present study is a comparative interventional study. Study was conducted on 50 apparently healthy full time housewives (20-50 years) who attended one month Yoga camp. Hamilton Anxiety (HAMA) Scale was used to evaluate anxiety levels before and at the end of the yoga camp. Statistical analysis was done by Paired t test using SPSS 9.0. The baseline pulse rate, SBP, DBP were 82.90 ± 4.25 bpm, 124.84 ± 11.022 mm Hg, 85.20 ± 10.81 mm Hg respectively. After four weeks yoga camp there was statistically significant lowering of pulse rate (77.58 ± 3.86 bpm), SBP (117.92 ± 6.76 mm Hg), DBP (78.68 ± 6.62 mm Hg). Before yoga training, percentage distributions of subjects with mild, moderate and severe anxiety were 6%, 18% and 76% respectively. At the end of four week yoga training, percentage distributions of subjects with mild, moderate and severe anxiety were 44.23%, 19.23% and 36.53% respectively. There was highly significant ($p=0.000$) difference in the mean values of total score before (33.71 ± 4.90) and after (26.93 ± 4.53) yoga. These results indicate that there was a reduction in the severity of anxiety from severe to moderate and mild indicating decrease in anxiety following yoga. Based on the results of our study, we conclude that regular yogic practices and adapting and implementing the principals and philosophy of yoga in day to day life may decrease the anxiety level.

Introduction

Presently prevalence of anxiety is increasing. In Present scenario modernization and competition are

among the leading causes of anxiety. Severe form of anxiety can have impact on physical and mental health (1). Yoga falls into the top ten of complementary and alternative medicine (CAM) therapies (2, 3). Studies indicate increasing anxiety levels in housewives than employed women (Warren 1975). The probable causes for this may be financial dependence, sense of incompetence, lack of social connectedness or self determination (4). Thus our study aimed to determine the effects of Yoga on anxiety levels in housewives.

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Materials and Methods

A four week yoga camp was organized and conducted by an expert instructor. 75 participants registered for the camp, out of which 8 were irregular and 17 were excluded as they had history of hypertension, diabetes, thyroid disorders and obesity related disorders. After thorough physical examination 50 apparently healthy housewives were included in the study. Participants were between the age group 20 to 50 years. All the subjects had never undergone any kind of yogic training earlier. Institutional ethical committee clearance was obtained. Informed consent was obtained from all the participants. The yoga camp was conducted between 5.30 am to 7.30 am daily for four weeks.

The yoga practice schedule consisted of :

1. Prayer – 5 min
2. Asanas – 25 min
3. Pranayama – 25 min
4. Meditation – 30 min (Rajyoga meditation)
5. Lecture on fundamentals in nutrition, stress management, meditation and yogic attitude in daily life – 30 min
6. Prayer – 5 min

The different types of Asanas practised were –

1. Suryanamaskar
2. Matsyasana
3. Shalabhasana
4. Ardhakatichakrasana
5. Pavanmuktasana
6. Padmasana
7. Shashankasana
8. Paschimatanasana

9. Bhujangasana

10. Shavasana

Types of Pranayama practised –

1. Kapalbhathi
2. Sheetalikaran
3. Bhastrika Pranayana

For rating of anxiety level the Hamilton Anxiety (HAMA) Scale (5) was used. All the participants were asked to fill the HAMA Scale before and after yoga camp. HAMA scale is a five point scale ranging from zero (not present) to four. Level of Anxiety is assessed by total score obtained.

Interpretation of scores : Mild anxiety: 18+, Moderate anxiety: 25+, Severe anxiety : 30+.

Statistical analysis

SPSS version 9.0 was used for statistical analysis. The number of subjects in each category i.e mild, moderate and severe anxiety was expressed as percentage. The Mean±SD of total score before and after yoga was determined. The score before and after yoga practice was compared using paired 't' test.

Results

Table I shows no difference in BMI of the subjects before and after yoga training. We observed a significant reduction in pulse rate ($p=0.000$), systolic ($p=0.000$) and diastolic ($p=0.001$) blood pressure and an insignificant ($p=0.089$) reduction in mean arterial pressure after yoga training. There was a significant ($p=0.001$) reduction in total anxiety score after yoga training. Before yoga training the percentage of subjects with mild, moderate and severe anxiety were 6%, 18% and 76% respectively. After yoga training the percentage of subjects with mild, moderate and severe anxiety were 19.23%, 44.23% and 36.53% respectively.

TABLE 1: Comparison of Anxiety Score before and after yoga.

Parameters	Before yoga	After yoga	'P' value
BMI (kg/m ²)	26.31±3.37	26.17±3.28	0.484 (NS)
Pulse rate (beats/min)	82.90±4.25	77.58±3.86	0.000***
SBP (mm/Hg)	124.84±11.022	117.92±6.76	0.000***
DBP (mm/Hg)	85.20±10.81	78.68±6.62	0.001***
MAP (mm/Hg)	96.02±17.14	91.83±6.79	0.089 (NS)
Anxiety score	33.71±4.90	26.93±4.53	0.000***

Data expressed are mean±SD *P:<0.05: Significant, **P:<0.01: Highly significant, ***P:<0.001: Very highly significant, NS: Non Significant. BMI-Body mass Index, SBP-Systolic blood Pressure, DBP-Diastolic blood pressure, MAP-Mean arterial pressure.

Discussion

The results of our study demonstrate the beneficial effects of yoga. We noted a significant reduction in pulse rate, systolic and diastolic blood pressure and an insignificant reduction in mean arterial pressure following yoga training for four weeks. This could be attributed to modulation of autonomic activity resulting in predominance of parasympathetic functions and relative reduction of sympathetic tone (6). Anxiety is associated with arousal in sympathetic nervous system. Meditation by modifying the state of anxiety reduces sympathetic over activity thereby decreasing arterial tone and peripheral resistance resulting in lowering of heart rate and diastolic blood pressure (7). There was significant reduction in the mean total anxiety score indicating significant reduction in the severity of anxiety. The percentage of subjects with severe anxiety was reduced after yoga.

Similar observations have also been reported by Shashi and coworkers (8), Gupta & Gupta (9), Gupta

et al (10) and Jadhav and Havalappanavar (11). In our study there was significant increase in the percentage of subjects with mild and moderate anxiety following yoga this is because of shifting from severe anxiety to moderate and from moderate to mild forms. There was decrease in the score of anxiety in subjects with mild anxiety after yoga. This indicates that yoga may not completely cure a person from anxiety but only reduces the severity of anxiety.

Anxiety is associated with shallow breathing which can lead to arousal in the sympathetic nervous system. Regular yoga practice decreases the hyper arousal of sympathetic nervous system and improves functioning of the parasympathetic nervous system that activates the relaxation response (12). Consistent yoga practice improves circulation in the endocrine glands and enhances the functions of hormones that play a primary role in the physiology of depression. This results in a reduction in depression and improved overall mood (13, 14). Studies have also reported a significant increase in alpha waves (relaxation) and theta waves (unconscious memory, dreams, and emotions) after a two-hour yoga class. These results indicate that the brain is deeply relaxed after yoga and that participants have better awareness of their subconscious and emotions (15).

Conclusion

Based on the results of this study, we conclude that regular yogic practices and adapting and implementing the principals of yoga in day to day life may decrease the severity of anxiety. Thus yoga can be used as an adjunct along with psychotherapy or medication in the treatment of anxiety.

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