

Yoga Nidra as a complementary treatment of anxiety and depressive symptoms in patients with menstrual disorder

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ABSTRACT

Background: Emotional insecurity, stress, depressive or/and anxiety symptoms are common with variable severity among patients with menstrual disorder. Yogic relaxation therapy (*Yoga Nidra*) leads to conscious and subconscious recognition of these underlying psychological factors and helps releasing of suppressed conflicts.

Objective: To evaluate the effect of *Yoga Nidra* on anxiety and depressive symptoms in patients with menstrual disorders.

Materials and Methods: Subjects were recruited from the Department of Obstetrics and Gynecology, C.S.M. Medical University (erstwhile KGMU), Lucknow Uttar Pradesh, India. The subjects were randomly divided in to two groups: Intervention group (with yogic intervention) and control group (without yogic intervention). Assessments of all subjects were carried out by administering Hamilton anxiety scale (HAM-A) and Hamilton rating scale for depression (HAM-D) at baseline and after six months.

Results: The mean age with S.D of the intervention group was 27.67 ± 7.85 years, and for control group was 26.58 ± 6.87 years (among completed intervention group $nn = 65$ and control group $nn = 61$). There was significant reduction of scores in HAM-A ($P < 0.003$) and HAM-D ($P < 0.02$) respectively in subjects with mild to moderate anxiety and depressive symptoms after six months of yoga therapy (*Yoga Nidra*) in intervention group in comparison to control group.

Conclusion: The patients with mild to moderate anxiety and depressive symptoms improve significantly with '*Yoga Nidra*' intervention. There is no significant improvement in the patients with severe anxiety and depressive symptoms.

Key words: Anxiety and depressive symptoms; menstrual disorders; *Yoga Nidra*.

INTRODUCTION

Menstrual irregularity is associated with several psychological symptoms. Many depressive, anxiety or emotional and other non-specific symptoms including difficulty in falling asleep (insomnia), headache, fatigue, mood swings, increased emotional sensitivity, and changes in libido are quite common during the menstrual cycles and menstrual irregularities.^[1]

There are several types of menstrual cycle problems which related to irregular periods that affect frequency of


menstruation like polymenorrhoea, oligomenorrhoea, or amenorrhoea.

There are some other conditions which are related to pain during menstruation such as dysmenorrhoea and irregular periods that affect quantity of menstruation which are hypomenorrhoea, menorrhagia.^[2]

Yogic practice (*Yoga Nidra*) is a successful therapy for both recent and long standing psychological disturbances of all types especially high anxiety levels.^[3]

However, effect of *Yoga Nidra* on anxiety and depressive symptoms associated with menstrual irregularities has not been studied. The present study is based on the findings of one of the aims of a larger study on *Yoga Nidra*^[4] to see the effect on the course of menstrual problem and psychological problem associated with menstruation and to explore the effect of *Yoga Nidra* in the management of anxiety and depressive symptoms in patients with menstrual disorder.

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MATERIALS AND METHODS

Study design and setting

Study participants

All patients, aged 18 to 45 years with menstrual problem/irregularities for more than six months, who attended Department of Obstetrics and Gynecology, CSMMU, Lucknow, U. P., India, were screened by a consultant for participation on the basis of inclusion and exclusion criteria.

Inclusion criteria

- Women aged from 18 to 45 years.
- Diagnosis suggestive of menstrual irregularities (pathological amenorrhea, dysmenorrhea, oligomenorrhoea, polymenorrhoea, hypomenorrhea, menorrhagia, and metrorrhagia) for more than six months.

Exclusion criteria

- Women having known gynecological neoplasm requiring surgery
- Pregnancy
- Pelvic inflammatory disease (PID)

All included patients received appropriate pharmacotherapy by the consultant. The patients with menstrual irregularities were randomized to divide into two groups: One on *Yoga Nidra* therapy and pharmacotherapy (intervention group), and another on only pharmacotherapy (control group). Assessments of all subjects were carried out by administering Hamilton anxiety scale (HAM-A) and Hamilton rating scale for depression (HAM-D) at baseline and after six months. We used computer-generated numbers for permuted randomization. Small paper chits written either case or control were placed in opaque, sequentially numbered envelopes prepared by a biostatistician who had no contact with participants.

Initially all the patients with menstrual irregularities were recruited irrespective of severity of anxiety or depressive symptoms. Following randomization, psychological assessment of all patients was done to assess the severity of anxiety and depressive symptoms by applying the following tools (HAM-A and HAM-D). All the patients with clinical significant or non-significant anxiety or depressive symptoms were re-evaluated after six months; however, those patients with clinically non-significant anxiety and depressive symptoms were excluded for the purpose of statistical evaluation to see the effect of intervention (*Yoga Nidra*) in comparison to control group.

There were two outcome measures:

1. Hamilton anxiety scale (HAM-A):^[5] The HAM-A, a 14

item scale was used to assess the severity of anxiety at baseline and during the follow up.

2. Hamilton rating scale for depression (HRSD, HAM-D):^[6] HAM-D, a 21 item observer-rated scale to assess the presence and severity of depressive states.

Yoga Nidra intervention

Yoga Nidra is a deep relaxation technique. We used the *Yoga Nidra* intervention, developed by Swami Satyananda Saraswati, School of Yoga, Munger, Bihar, India. One Yoga instructor was selected by expert panel for this study.^[7] Yoga classes (for *Yoga Nidra*) 35-min per day, five days in week for a period of six months in the intervention group at department of physiology, and the study was approved by the ethical committee at CSMMU, Lucknow, U. P., India.

Data analysis

Paired (dependent *t*-test) was used to test the mean difference of scores of HAM-A (anxiety) and HAM-D (depression) of the subjects at baseline and after six months in both intervention and control groups.

The differences in pre and post treatment scores were used for the analysis. Student's independent sample *t*-test (parametric test) was used to compare the differences in scores^[8,9] between the two groups (yoga vs. non yoga group) which were normally distributed. Statistical analysis was done using GraphPadInStat version 3.05 software Inc, year 2000.

RESULTS

A total of 150 female subjects were included suffering from menstrual irregularities. Out of 150 subjects, 10 subjects from intervention group and 14 subjects from control group were dropped. Total subjects who completed the study were 65 and 61 in intervention and control groups, respectively.

Clinical significant anxiety was found in 56 (86.15%) and 55 (90.16%) of the subjects in intervention and control groups respectively. Clinical significant depressive symptoms were present in 58 (89.23%) and 51 (83.61%) of subjects in intervention and control groups respectively.

Principal outcome measures

The patients with mild to moderate anxiety, depressive symptoms in intervention group showed [Table 1, Figure 1 and Table 2, Figure 2] significant improvement following six months of intervention as suggested by significant reduction in scores of HAM-A (Mild $P < 0.01$, Moderate $P < 0.02$) and HAM-D (mild $P < 0.04$, moderate $P < 0.05$). However, there is no significant change in scores of the patients with severe anxiety and depressive symptoms.

Table 1: Mean difference of scores of HAM-A (anxiety) at baseline and after six months in intervention and control groups (paired t-test)

	Intervention group, n = 56				Control group n = 54				
	Baseline	Post-intervention	t value	P value	Baseline	After six months	t value	P value	
Mild (n = 27)	21.4 ± 1.83	20.3 ± 2.02	2.38	0.01	Mild (n = 27)	21.6 ± 2.12	21.1 ± 2.33	0.86	0.38
Moderate (n = 17)	27.5 ± 1.03	26.6 ± 1.40	2.39	0.02	Moderate (n = 22)	26.8 ± 1.49	26.4 ± 1.75	0.81	0.41
Severe (n = 12)	31.7 ± 0.95	31.2 ± 0.95	0.73	0.48	Severe (n = 5)	33.1 ± 1.94	32.3 ± 1.63	0.80	0.43
Total (n = 56)	26.8 ± 5.17	25.0 ± 5.47	4.72	0.04	Total (n = 54)	27.9 ± 5.75	27.1 ± 5.60	4.01	0.60

Table 2: Mean difference of scores of HAM-D (depression) at baseline and after six months in intervention and control groups (paired t-test)

	Intervention group, n = 58				Control group n = 51				
	Baseline	Post-intervention	t value	P value	Baseline	After six months	t value	P value	
Mild (n = 42)	10.2 ± 1.88	9.38 ± 2.03	2.00	0.04	Mild (n = 44)	10.3 ± 1.65	9.98 ± 1.60	1.25	0.21
Moderate (n = 12)	15.9 ± 1.39	14.2 ± 1.28	2.11	0.05	Moderate (n = 5)	16.9 ± 1.34	16.5 ± 1.27	0.81	0.43
Severe (n = 4)	22.8 ± 1.41	22 ± 0.70	1.34	0.31	Severe (n = 2)	20.1 ± 1.41	19.9 ± 0.70	0.44	0.69
Total (n = 58)	16.0 ± 5.90	14.9 ± 5.56	5.00	0.03	Total (n = 51)	15.7 ± 5.30	14.9 ± 4.83	2.46	0.13

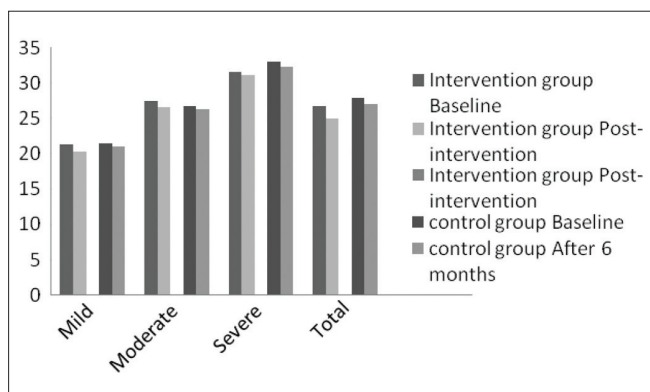


Figure 1: Mean difference of scores of HAM-A (anxiety) at baseline and after six months in both groups

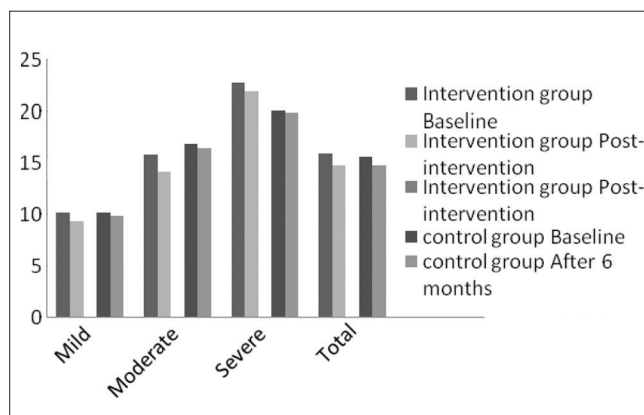


Figure 2: Mean variation of scores of HAM-D (depression) at baseline and after six months in both groups

There is no significant improvement in control group after six months.

Table 3, Figure 3 and Table 4, Figure 4 show comparison of differences of pre and post-assessment of HAM-A (anxiety) and HAM-D (depression) scores between intervention and control groups. There was significant reduction of scores in HAM-A (mild $P < 0.002$, moderate $P < 0.03$) and HAM-D (mild $P < 0.02$, moderate $P < 0.05$) in intervention group in comparison to control group after six months. However there is no significant change in score in subjects with severe anxiety and depressive symptoms, when comparison between subjects of intervention and control group was made.

When the comparison of mean difference in scores of pre and post assessment values of HAM-A (anxiety) and HAM-D (depression) between all the subjects with anxiety and depression [Table 5, Figure 5 and Table 6, Figure 6] was done, it was observed that there was overall significant improvement in anxiety ($P < 0.003$) and depression ($P < 0.02$) in intervention group in comparison to control group.

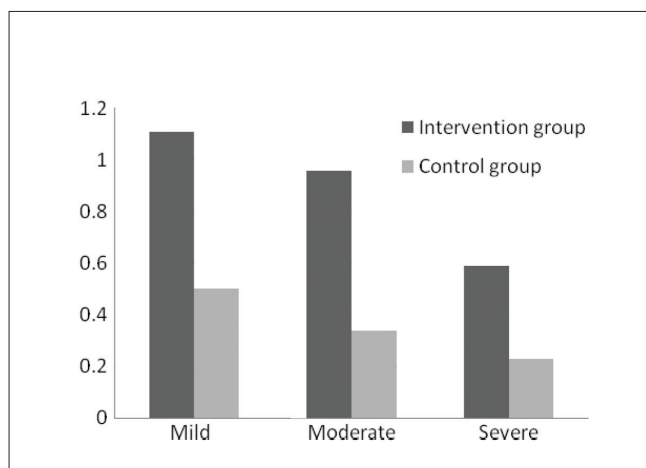


Figure 3: Assessment of differences between pre and post assessment in both groups with scores of HAM-A after six months

Adherence to the intervention

Out of 75 patients of intervention group, 65 subjects completed *Yoga Nidra* (completed at least 80% classes of *Yoga Nidra*).

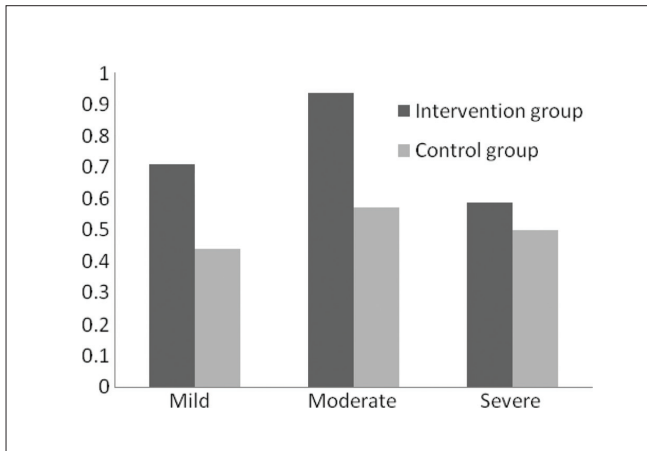


Figure 4: Evaluation of differences between pre and post assessment of intervention and control groups with scores of HAM-D after six months

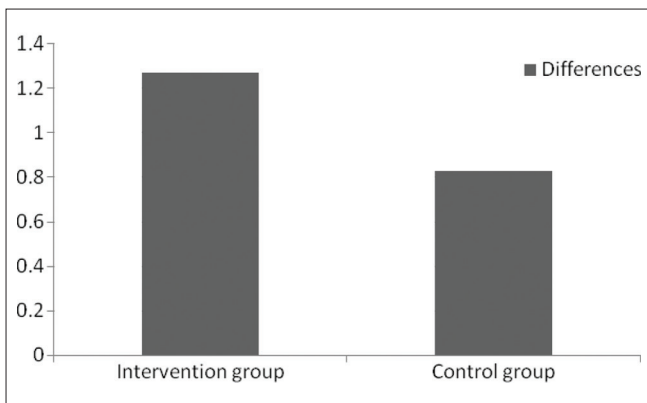


Figure 5: Evaluation of differences between pre and post assessment of intervention and control groups with scores of HAM-A after six months

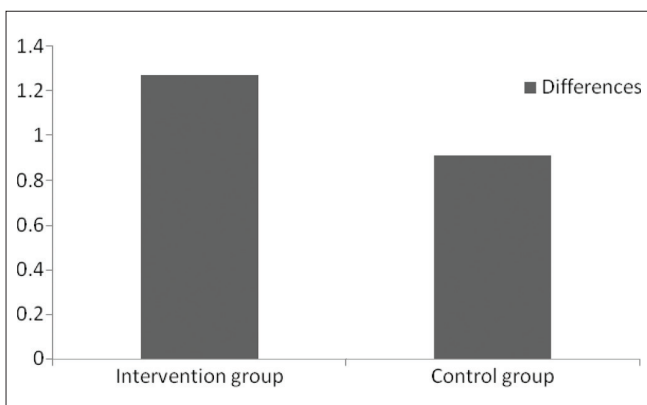


Figure 6: Comparison of differences between pre and post assessment of intervention and control groups with scores of HAM-D after six months

DISCUSSION

In this study, it was found that the subjects with mild to moderate anxiety showed significant improvement following the intervention in comparison to control group. It suggests that the *Yoga Nidra* may be helpful for the patients with mild to moderate anxiety symptoms but not

Table 3: Comparison of differences between pre and post assessment of intervention and control groups with scores of HAM-A (Student’s independent sample t-test) after six months

	Intervention group n = 56	Control group n = 54	t value	P value
Mild	1.11 ± 0.09	0.5 ± 0.62	3.10	0.002
Moderate	0.96 ± 0.81	0.34 ± 0.61	1.83	0.03
Severe	0.59 ± 0.57	0.23 ± 1.16	0.52	0.61

Table 4: Comparison of differences between pre and post assessment of intervention and control groups with scores of HAM-D (Student’s independent sample t-test) after six months

	Intervention group n = 58	Control group n = 51	t value	P value
Mild	0.71 ± 0.67	0.44 ± 0.54	2.04	0.02
Moderate	0.94 ± 0.72	0.57 ± 0.53	1.23	0.05
Severe	0.59 ± 0.70	0.50 ± 0.70	1.41	0.29

Table 5: Comparison of differences between pre and post assessment of intervention and control groups with scores of HAM-A (Student’s independent sample t-test) after six months

Variables	Difference in scores		t statistics	P value
	Intervention group	Control group		
	n = 56 Mean±S.D	n = 54 Mean±S.D		
Anxiety	1.27 ± 0.73	0.83 ± 0.71	2.51	0.003

Table 6: Comparison of differences between pre and post assessment of intervention and control groups with scores of HAM-D (Student’s independent sample t-test) after six months

Variables	Difference in scores		t statistics	P value
	Intervention group	Control group		
	n = 58 Mean±S.D	n = 51 Mean±S.D		
Depression	1.27 ± 0.69	0.91 ± 0.78	2.51	0.02

in patients with severe symptoms. The analysis also reflects that ‘*Yoga Nidra*’ intervention has significantly positive impact in majority of the participants (78.57%) in terms of reducing the severity of anxiety symptoms. Prior studies have also shown significant improvement in the anxiety following meditation^[10] and breathing exercises.^[11] Studies have also reported reduction in state anxiety following muscle relaxation techniques and listening to music.^[12]

The study results revealed similar trends for depressive symptoms as well. Previous study reported similar significant improvements on measures of stress and psychological outcomes (state and trait anxiety, well-being, vigor, fatigue, and depression) in women suffering from mental distress after participating in a three-months ‘*Iyengar*’ yoga class.^[13] Other studies have also reported

similar findings and supported the finding of the current study regarding the effect of Yoga on anxiety and depressive symptoms.^[14,15] However, probably no study has compared the subjects on the basis of severity of depression and anxiety symptoms as done in the current study.

CONCLUSION

The patients with mild to moderate anxiety and depressive symptoms improve significantly with 'Yoga Nidra' intervention. There is no improvement in the patients with severe anxiety and depressive symptoms. However, small sample size and selection of subjects from hospital outpatient clinic are the limitations of this study. Overall this study shows that the *Yoga Nidra* is an effective tool for improvement of psychological problems emerged out of long standing menstrual problems.

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