



Comparative Clinical Study on The Effect of Yoga and Music on Manasik Bhava During Pregnancy W.S.R.To The Mental Status of Pregnant Women

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 13 Oct 2023	Purpose -Stress, anxiety, negative thoughts, and disrupted sleep of the expectant mother can all have negative effects on the unborn child. The current study looks into whether interventions such as yoga, pranayama, and classical music can improve maternal and foetal mental health. Methods -This comparative clinical study included 134 (67 in each group) pregnant women in total. A questionnaire was created, and parameter grading was performed. This study was conducted between the 18th and 20th weeks of pregnancy up to labour. The Hamilton anxiety scale was used to assess anxiety symptoms. Result -The current study found promising effects of yoga and music on depressive symptoms, maternal well-being, and perceived closeness during pregnancy. Prenatal yoga and music interventions could be a simple and effective way to improve the expectant mother's mood and well-being while also promoting mother-infant bonding. Conclusion -In terms of immediate effects, both interventions had a positive effect on sleep, mood and thoughts, emotional status, and anxiety symptoms.
CC License CC-BY-NC-SA 4.0	Keywords: Pregnancy, Yoga, Classical Music, Antenatal Care, Anxiety, Mood, And Thoughts

1. Introduction

Many women experience problems with their psychological health during pregnancy or right after giving birth. It can happen to anybody. In our ancient science importance of psychological status during conception and pregnancy is described very precisely. It is stated that what -so-ever type of diet and mode of life is used by couple, the born child has similar character. Normalcy of psychology or happiness of couple is most important for conception as well as throughout pregnancy.¹

The psychological health problems that are most associated with pregnancy are depression and anxiety. These have a significant impact on many pregnant women. The literature reveals that women who are experiencing and have experienced high-risk pregnancies have a host of emotional issues including fear, guilt, shock, grief, frustration, worry, loneliness and isolation². Simmons and Goldberg report that the label 'high-risk' pregnancy is associated with higher psychological distress. Some pregnant women may experience either the onset or relapse of some serious psychological disorders³⁻⁴ resulting in low birth weight and preterm delivery. Women with bipolar disorder experience onset of mood instability⁵⁻⁶

Researchers are also interested in sleep health due to its critical role in the control of metabolism, energy balance, hormonal secretion, immune response, and brain function, as well as its overall effects on

various biological systems. Sleep health is also important for mood and anxiety.⁷ Short and long sleep durations have been linked to negative health outcomes such as obesity, diabetes, and coronary heart disease.⁸ Prenatal mood of mothers predicts postnatal psychopathology and child maladjustment⁹, foetal development and perinatal outcomes¹⁰. As a result, identifying mood trends in pregnancy may aid in identifying periods of particular risk for the mother-child dyad, as well as critical periods. Better characterization of mood trends may also aid in identifying prominent mood patterns in individual women, indicating potential medical or psychosocial issues that require attention.

From the time of conception through antenatal care, labour, and the postpartum period, mental health is now given the attention it deserves. The importance of mental health and its immediate and long-term effects on the mother and child are explained to the patients.

Non-pharmacological interventions such as yoga and music are becoming increasingly popular because they are low cost, easily accessible, and have a high acceptability among users. It promotes maternal strength and reduces anxiety and stress in a diverse population.¹¹⁻¹²

Studies show that mindfulness, an important component of yoga, reduces hyperarousal, improves sleep disturbance, and addresses stress-related cardiac and respiratory issues.

Field et al. concluded that yoga exercises during pregnancy reduced anxiety, depression, back and pelvic pains, and resulted in infants being born at an appropriate gestational age and with normal birth weights¹⁴. The purpose of this research is to compare the effects of yoga, music, on mental status and sleep during pregnancy.

Aim and Objective

Aim-

To study and compare the effect of yoga and music with standard antenatal care on *manasik bhava* (mental status) of the pregnant women.

Objective-

To study the effect of certain aspects of yoga (*asana, pranayama*), and music with standard antenatal care on mental status of the women during pregnancy.

2. Materials And Methods

134 pregnant women were selected randomly for study from OPD and IPD of Parul Ayurveda Hospital, Parul University Gujarat & Government Ayurveda Hospital, Jabalpur. MP

-It was an open randomized clinical trial

-Sample size- 134

-A detailed proforma was prepared with details of history taking, physical signs and symptoms, laboratory investigations as mentioned in classics and allied sciences.

Study Design:

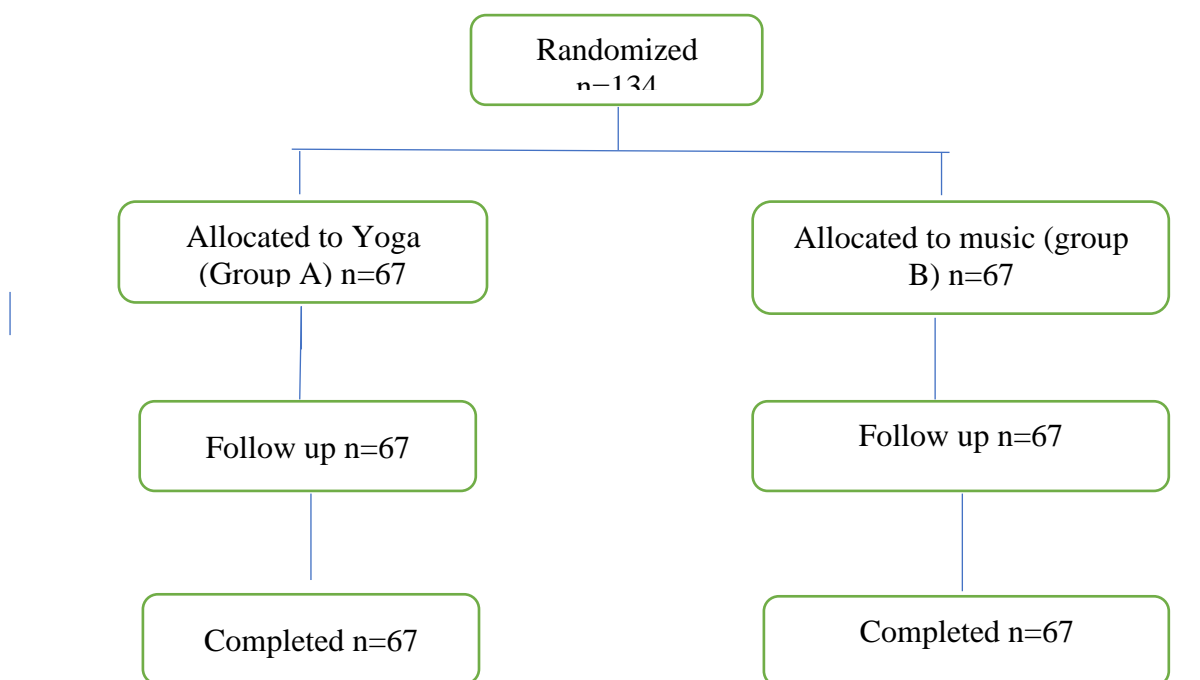
A group of 134 pregnant women with singleton pregnancy having gestation period from 18-20 weeks of pregnancy up to delivery were selected and categorized into 2 groups. group A and group B

Group A- A group of 67 pregnant women were advised for yoga with standard antenatal care.

Group B- A group of 67 pregnant women were advised to listen music in prescribed time with standard antenatal care.

Expectant mothers of group A were advised for standard antenatal care, relaxation exercise, *pranayama* (breathing exercise) specifically *anuloma-viloma* and *bhramari*, trimesterwise *yogasana* (postures) in the morning. (Asana- In 2nd trimester- *Ardhakati chakrasana, ardhashakrasana, trikonasana, vajrasana, padmasana, baddhapadmasana, veerasana* and *shawasana*. In 3rd trimester- *ardhakatichakrasana, ardhashakrasana, vajrasana, malasana*, butterfly (only in 9th month), *badhakonasana* (only during 9th month), *shawasana* (in lateral position). *Yogasana* advised to perform according to their strength.

The pregnant women of second trimester were advised to listen raaga *bhupali*, *bageeshri*, *kedar* and in third trimester *bhupali*, *malkans* and *kalyana* according to prescribed time of that raga. Source of music was 25 cm away from the abdomen in medium sound (between 50-60 dB).



Follow up-20,24,28,32,34,36,38, and 40 weeks of pregnancy Study duration Around 20-22 weeks up-to delivery.

Instrument

Assessment of scoring of sleep was done on the basis of Likert type scale. 0-sound sleep,1-disturbed ,2-sleeplessness. While mood and thoughts 0-positive thoughts with joyful mood,1-negative thoughts, irritability present.

Anxiety was scored using Hamilton's anxiety scale the scale consists of 14 items designed to assess the severity of a patient's anxiety. Each of the 14 items contains a number of symptoms, and each group of symptoms is rated on a scale of zero to four, with four being the most severe. All these scores are used to compute an overarching score that indicates a person's severity of anxiety. Each item is scored on a scale of 0 (not present) to 4 (severe), with a total score range of 0–56, classification of symptoms-0-absent,1-mild,2-moderate,3-severe and 4-incapacitating. Where HAM-A score level of anxiety <17 indicates mild severity,17-24 moderate severity, and 25-30 moderate severe.

Ethical considerations- The importance of research and its objectives were explained to the participants. They were allowed to leave the study whenever they wanted. Informed consent was obtained from all subjects who were enrolled the study and they were ensured that the information obtained from the subjects remain private. Participants were respected and ethical discrimination was avoided. This study was approved by the Ethical Committee. Trial registration code of project was Trial registration number-2021/09/036402, date of registration: 10.09.2021.

3. Results and Discussion

Statistical analysis

The parameters were scored based on standard methods and analysed statistically. We compared two groups by using the student's t-test they were normal ($P>0.05$). In all the tests using in this study, a significant level more than 0.05 was considered.

Group -A Yoga

Table-1 Distribution of Patients According to Sleep

Sleep	1	Follo w up1	2	Follo w up 2	3	Follo w up 3	4	Follo w up 4	5	Follo w up 5	6	Follo w up 6	7	Follo w up7	8	Follo w up 8
Sound	2	2.98	7	10.44	1 1	16.41	2 1	31.34	3 6	53.73	4 3	64.17	4 5	67.1 6	5 2	77.61
Distur bed	3	53.7 3	4	62.68	4 0	59.70	3 7	55.22	2 8	41.79	2 0	29.85	1 8	26.8 6	1 3	19.40
Sleepl essnes s	2	43.2 8	1	26.86	1 6	23.88	9	13.43	3	4.477	4	5.97	4	5.97	2	2.98
Total	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100

Sleep: On day 1, 53.73% diagnosed with disturbed sleep, 43.28% disturbed sleep, on 2nd 62.68% with disturbed sleep, 26.86% sleepless, on 3rd 59.70% with disturbed sleep, 23.88% sleepless, on 4th 55.22% disturbed sleep, 13.43% sleepless, on 5th 41.79% with disturbed sleep, 4.47% sleepless, on 6th 29.85% with disturbed sleep, 5.97% sleepless, on 7th 67.16% diagnosed by sound sleep and on 8th follow up 77.61% were reported with sound sleep.

Table-2 Distribution of Patients According to Mood and Thoughts

Mood & thought s	1	Foll owu p1	2	Follo w-up 2	3	Follo w-up 3	4	Follo w-up 4	5	Follo w-up 5	6	Follo w-up 6	7	Follo w-up 7	8	Follo w-up 8
Positiv e thought s	3	4.47	8	11.9 4	1 5	22.3 8	1 7	25.3 7	2 7	40.2 9	3 9	58.2 0	5 1	76.1 1	5 8	86.5 6
Negati ve thought s	6	95.5 2	5	88.0 5	5 2	77.6 1	5 0	74.6 2	4 0	59.7 0	2 8	41.7 9	1 6	23.8 8	9	13.4 3
Total	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100

Mood and thoughts: On day 1, 95.52% diagnosed with negative thoughts, on 2nd follow up 88.05% with negative thoughts, on 3rd 77.61%, on 4th 74.62%, on 5th 59.70%, on 6th 41.79%, on 7th 23.88% diagnosed with negative thoughts, while on 8th follow up 86.56% diagnosed with positive thoughts.

Table-3 Distribution of Patients According to Anxiety

Anx iety	1	Follo w up 1	2	Follo w up 2	3	Follo w up 3	4	Follo w up 4	5	Follo w up 5	6	Follo w up 6	7	Follo w up 7	8	Follo w up 8
Abs ent	0	0	2	2.98	8	11.94	1 5	22.38	2 5	37.31	3 8	56.71	5 0	74.62	5 1	76.11
Mil d	4	62.68	4	65.67	4	65.67	4 3	64.17	3 5	52.23	2 9	43.28	1 7	25.37	1 6	23.88
Mo dera te	2	37.31	2	31.34	1 5	22.38	9	13.43	7	10.44	0	0	0	0	0	0
Tota l	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100

Anxiety: On day 1 62.68% with mild anxiety and 37.31% had moderate, on 2nd follow up and 65.67% with mild, 31.34 % moderate and 2.98% had no anxiety, on 3rd 65.67% with mild, 22.38% moderate and 11.94% without anxiety on 4th 64.17% mild, 13.43% moderate, on 5th 52.23% mild, 10.44% moderate, on 6th 43.28% mild and 56.71% without anxiety, on 7th 74.37% without anxiety and 25.37% had mild. On 8th follow up 76.11% were without anxiety.

Group B Music-

Table-4 Distribution of Patients According to Sleep

Sleep	1	Follo w up 1	2	Follo w up 2	3	Follo w up 3	4	Follo w up 4	5	Follo w up 5	6	Follo w up 6	7	Follo w up 7	8	Follo w up 8
Sound	1	1.49	1 8	26.86	5 0	74.62	5 9	88.05	6 5	97.01	6 4	95.52	6 0	89.55	6 1	91.04
Distur bed	4 5	67.16	4 6	68.65	1 3	19.40	8	11.94	2	2.98	3	4.47	7	10.44	6	8.95
Sleep lessnes s	2 1	31.34	3	4.47	4	5.97		0		0		0		0		0
Total	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100

Sleep: on 1st visit 1.49% diagnosed sound, 67.16% disturbed, 31.34% with sleeplessness, on 2nd follow up 26.86% diagnosed sound, 68.65% disturbed, 4.47% with sleeplessness, on 3rd 74.62% diagnosed sound, 19.40% disturbed, 5.97% with sleeplessness, on 4th 88.05% diagnosed sound, 11.94% disturbed, on 5th 97.01% diagnosed sound, 2.98% disturbed, on 6th 95.52% diagnosed sound, 4.47% disturbed, on 7th 89.55% diagnosed sound, 10.44% disturbed, on 8th follow up 91.04% diagnosed sound, 8.95% disturbed.

Table-5 Distribution Of Patients According To Mood And Thoughts

Mood and thoughts	1	Follo w up 1	2	Follo w up 2	3	Follo w up 3	4	Follo w up 4	5	Follo w up 5	6	Follo w up 6	7	Follo w up 7	8	Follo w up 8
Positive thoughts	6 1	91.0 4	1 1	16.4 1	4 0	59.7 0	5 6	83.5 8	6 5	97.0 1	6 7	100	6 7	100	6 7	100
Negativ e thoughts	6	8.95	5 6	83.5 8	2 7	40.2 9	1 1	16.4 1	2	2.98		0		0		0
Total	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100	6 7	100

Mood and thoughts: On 1st visit 91.04% diagnosed with positive thoughts 8.95% with negative thoughts, on 2nd follow up 16.41% diagnosed with positive thoughts 83.58% with negative thoughts, on 3rd 59.70% diagnosed with positive thoughts 40.29% with negative thoughts, on 4th 83.58 % diagnosed with positive thoughts 16.41 % with negative thoughts, on 5th 97.01 % diagnosed with positive thoughts 2.9 % with negative thoughts, on 6th follow up 100% diagnosed with positive thoughts, on 7th 100% diagnosed with positive thoughts, on 8th follow up 100% diagnosed with positive thoughts 0% with negative thoughts

Table-6 Distribution Of Patients According To Anxiety

Anx iety	1	Follo w up 1	2	Follo w up 2	3	Follo w up 3	4	Follo w up 4	5	Follo w up 5	6	Follo w up 6	7	Follo w up 7	8	Follo w up 8
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Absent	1	1.49	1	19.40	4	59.70	5	79.10	5	82.08	6	91.04	6	100	6	100
Mild	3	50.74	3	56.71	1	26.86	1	20.89	1	17.91	6	8.95		0		0
Moderate	3	47.76	1	23.88	9	13.43		0		0		0		0		0
Total	6	100	6	100	6	100	6	100	6	100	6	100	6	100	6	100

Anxiety: On day 1, 1.49% diagnosed absent, 50.74% with mild, 47.76% with moderate on 2nd follow up 19.40% diagnosed absent, 56.71% with mild, 23.88% with moderate, on 3rd follow up 59.70% diagnosed absent, 26.86% with mild, 13.43% with moderate on 4th follow up 79.10% diagnosed absent, 20.89% with mild, on 5th follow up 82.08% diagnosed absent, 17.91% with mild, on 6th follow up 91.04% diagnosed absent, 8.95% with mild, on 7th follow up 100% diagnosed absent, on 8th follow up 100% diagnosed absent.

Table-7 Sleep

t test p value (A/B,	0.250	<0.000	<0.000	<0.000	<0.000	<0.000	<0.000	0.0010	0.016
	0	1	1	1	1	1	1	,	2

Table-8 Mood and Thoughts

t test p value (A/B,	0.068	0.461	<0.000	<0.0001	<0.000	<0.000	<0.000	0.001
	0	3	1	,	1	1	1	6

Table-9 Anxiety

t test p value (A/B	0.3113	0.0214	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	,	,	,	,	,	,	,	,
	0.3113	0.0214	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	,	,	,	,	,	,	,	,

a. Significantly better improvement in sleep during 8th follow up in Group B (91.04%) Than group A (77.6%) Overall effect of Sleep value was 0.0001 which is significant because P- value is more than (>0.05)

b. Significantly better improvement in mood and thoughts in group B than group A It was 100% positive thoughts from 6th follow up in group B. Overall effect of mood and thoughts value was 0.0012 which is significant because P- value is more than (>0.05)

c. Significantly better improvement in anxiety in group B than group A. There was no anxiety seen from 6th follow up. During 8th follow up it was absent in group B, and 76.11% in group A. Overall effect of Anxiety value was <0.0001 which is significant because P- value is more than (>0.05)

Today, yoga and music are of interest as a popular field of alternative medicine. This comparative clinical study was done to examine the impact of yoga and classical music on *manasik bhava* (mental status) and sleep during pregnancy, as well as maternal and fetal complications.

Mothers with good mental health are more likely to interact with their children in ways that encourage growth and help them realise their full developmental potential. Children of mothers who experience mental health issues, however, experience significantly delayed development. Therefore, promoting maternal, foetal, and infant health requires appropriate interventions to alleviate women's mental status and sleep before, during, and after pregnancy.

However, due to stresses about the potential teratogenic effects of some commonly used medications, including barbiturates, opioids, benzodiazepines, thalidomide, and paroxetine, pharmacological stress

management may not be acceptable for expectant mothers. In fact, taking these medications while pregnant has been linked to a higher risk of severe organ and limb dysgenesis and limb defects.¹⁶⁻¹⁷

In order to improve perinatal outcomes and promote maternal and foetal health during pregnancy, non-pharmacological interventions are essential. Yoga as well as classical music are both non-pharmacological interventions that can help with these issues. According to a systemic review, pregnant women who practice yoga experience less stress, less anger, less heart rate fluctuations, fewer feelings of depression and anxiety, and better birth outcomes. Yoga minimises salivary cortisol levels, a biomarker of both psychological and physical health. Yoga practices includes physical posture, breathing techniques (Pranayama) which minimize the complication of pregnancy, like pre-term delivery, intrauterine growth retardation, pregnancy induced hypertension. Practicing yoga has been proposed to modulate the HPA axis by buffering cortisol release in response to stress,²⁰ and is considered to keep women relaxed during pregnancy. Antenatal yoga lowered state of anxiety²¹ and cortisol level, pranayama practices relax the mind refocuses. It harmonises the mind and body to provide an ideal neuroglandular adjustment within the individual and may stimulate GH and DHEAS secretion. DHEAS, which is secreted by the adrenal cortex, functions in the human body as a neurosteroid, cardioprotective, anti-diabetic, anti-obesity, and immunostimulant. It is additionally known as youth hormone.²²⁻²³ yoga activates the parasympathetic nervous system during the third trimester of pregnancy, consolidating sleep during the night and decreasing α -amylase levels, which indicates reduced stress.²⁴

Similarly, to yoga, using music while pregnant is a very effective tool. One comprehensive review found that music affected neurotransmitters, hormones, cytokines, immunoglobulins, and psychological response in a variety of ways. Through the modulation of the nervous and endocrine systems, music may be able to reduce anxiety. The sympathetic nervous system may be suppressed by music listening, resulting in a reduction in cortisol levels²⁵⁻²⁶.

Additionally, the act of listening to music may stimulate activity in parts of the brain that are connected to emotional feelings and anxiety levels. So, both the interventions can be used to improve mental status and sleep during pregnancy as both are low risk-safe and cost-effective methods without any significant side effects compared to pharmacological treatment. Thus, their application in daily care may be advisable for pregnant women.

4. Conclusion

This study provides that yoga and music interventions during pregnancy may have beneficial effects on prenatal mental status like mood and thoughts, anxiety as well as improves sleep. It was seen that classical music is comparatively more effective than the yoga.

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