



# A study to evaluate the effectiveness of tranquilizing pranayama on psychological parameters among antenatal mothers with pregnancy induced hypertension

A. Jalajarani<sup>1</sup>, Dr. M. Gandhimathi<sup>2</sup>, Dr. V.R.Selvaambigai<sup>3</sup>

<sup>1</sup> Ph.D Scholar, Faculty of Medicine, Annamalai University, <sup>3</sup> Assistant Professor, MTPG &RIHS, Pondicherry

<sup>2</sup> Professor, Rani Meyyammai College of Nursing, Annamalai University, Chidambaram

## Abstract

Pregnancy is a period where physiological and psychological changes occurs rapidly in the body, adapts to growing fetus and perinatal outcome. Altered psychological functioning can occur from the very beginning to the end of pregnancy. Prenatal stress can have significant effects on pregnancy, maternal health and human development across the lifespan. These effects may occur directly through the influence of prenatal stress-related physiological changes on the developing fetus, or indirectly through the effects of prenatal stress on maternal health and pregnancy outcome which, in turn, affect infant health and development. Between 8% and 13% of women are diagnosed with anxiety or depressive disorders during pregnancy. These psychological problems will lead on to many physiological problems to the antenatal mother. The present study aimed to evaluate the effectiveness of tranquilizing pranayama on stress and anxiety among antenatal mother with pregnancy induced hypertension. A pre experiment study with one group pre & post test design was used. A total 50 antenatal mothers with PIH were selected by using convenience sampling technique at Rajiv Gandhi Women and Children Hospital, Pondicherry. Demographic variables and psychological parameters were assessed in pretest. Administered tranquilizing pranayama for four weeks, daily three times for 20 minutes. The results revealed that tranquilizing pranayama are effective and had positive influence on reducing the pregnancy related stress and anxiety.

**Key words :** Pranayama, PIH, Antenatal mother

## Introduction

Pregnancy is a period where physiological and psychological changes occurs rapidly in the body, adapts to growing fetus and perinatal outcome. Altered psychological functioning can occur from the very beginning to

the end of pregnancy, including the postpartum period. During pregnancy, visible changes occur in the body's appearance, as well as in femininity, affections, and sexuality, whereas the woman's position and role are gaining new qualities. To a greater or lesser degree, every expectant mother experiences psychological ambivalence, frequent mood changes from exhaustion to exaltation, emotional disturbances, and/or mixed anxiety-depressive disorder. From a psycho-social aspect, pregnancy could be considered a specific highly emotional state, which may be a potent stressor. Perinatal maternal stress and anxiety can lead to different complications that may have far-reaching consequences for both somatic and psychic functioning of the mother and newborn. (A Bjelica ,2018)

Numerous approaches are available for stress management that can decrease the patient's suffering and enhance their quality of life. Yoga is an ancient system of relaxation, exercise and healing with origins in India. Pranayama, the formal practice of controlling the breath, lies at the heart of yoga. If hypertensive patients could adopt a simple relaxation technique that would reduce stress and its physiological effects, they may be able to control their BP better, decrease the requirements for anti-hypertensive drugs and respond better during such physiologically stressful events(Ina Stephens,2017).

### Need for the study

Prenatal stress can have significant effects on pregnancy, maternal health and human development across the lifespan. These effects may occur directly through the influence of prenatal stress-related physiological changes on the developing fetus, or indirectly through the effects of prenatal stress on maternal health and pregnancy outcome which, in turn, affect infant health and development.

Antenatal mood disorders are common and are associated with adverse pregnancy outcomes, although the relationship between stress and prenatal maternal mood is still under investigation. Between 8% and 13% of women are diagnosed with anxiety or depressive disorders during pregnancy(WHO,2017). These psychological problems will lead on to many physiological problems to the antenatal mothers,gestational diabetes and hypertensive disorders are more common among them.

In India, incidence of pre-eclampsia is reported to be 8-10% of the pregnancies. Women with pregnancy complications, including hypertension, tend to have higher anxiety than those women who are healthy during their pregnancy. Association between stress and significant blood pressure elevations were documented in hypertensive pregnancies. There is evidence that foetal exposure to high levels of stress hormones may contribute to low birth weight babies and preterm birth. (LA Magee,2019). Therefore, there is need for interventions to lower blood pressure through decreases in stress responses in pregnant hypertensive women. Simple relaxation techniques can be used to relieve the stress and anxiety during pregnancy thereby reduced blood pressure. Tranquilizing pranayama is one of the effective relaxation techniques for anxiety and stress relief during pregnancy.

The main focus of this study was to assess the effectiveness of Tranquilizing pranayama on stress and anxiety among antenatal mothers with pregnancy hypertension.

### Statement of the problem

A study to evaluate the effectiveness of tranquilizing pranayama on psychological parameters among antenatal mother with pregnancy induced hypertension

### Aims and Objectives

The present study was aimed to assess the effectiveness of tranquilizing pranayama on psychological parameters among antenatal mothers with pregnancy induced hypertension.

The objectives of the study were

1. To assess the pretest level of stress and anxiety among antenatal mother with pregnancy induced hypertension
2. To evaluate the effectiveness of tranquilizing pranayama on stress and anxiety among antenatal mothers with pregnancy induced hypertension

### Hypothesis

1. There is a significant difference between the Pre- and Post-intervention level of stress and anxiety among antenatal mothers with Pregnancy Induced Hypertension

### Methods and Materials

Quantitative approach with one group pretest and post test design was used. Obtained formal permission from concern authority. About 50 antenatal mothers with pregnancy induced hypertension who met inclusion criteria were selected by convenience sampling technique. After sample selection antenatal mothers were gathered in a small group and explained the study purpose. After getting written consent from individual samples, pre-test was carried out among selected antenatal mothers with PIH. Stress was assessed by Pregnancy Stress Rating Scale (PSRS) and anxiety was assessed by Pregnancy-Related Anxiety Questionnaire (PRAQ). Tranquilizing pranayama was demonstrated individually to the selected antenatal mothers with PIH and mothers were motivated to practice 20 minutes, three times a day for four weeks. Direct supervision done and also follow-up was carried out through WHATSAPP message. Post test was carried out after 4 weeks of intervention. Collected data was documented and analyzed.

### Result

**Table 1.1: Frequency and Percentage Distribution of Clinical Variables**

N=50

Clinical Variables	No.	Percentage
<b>AGE in years</b>		
18-22	7	14
23-26	25	50
27-30	12	24
31-34	4	8
35 & above	2	4
<b>Weight in kg</b>		
Below 46	0	0
46-55kg	0	0
56-65kg	36	72
66-75kg	14	28
Above 75kg	0	0
<b>Height</b>		
130-140 cm	0	0

141-150 cm	0	0
151-160 cm	36	72
161-170 cm	14	28
<b>BMI</b>		
<18.5-Underweight)	0	0
18.5-24.5- Normal	36	72
25-29.9 -Overweight	14	28
>30-Obese	0	0
<b>Gravida</b>		
Primigravida	34	68
Multi gravida	16	32
<b>Gestational week</b>		
32-34wks	41	82
34-35wks	9	18

Table-1 shows frequency and percentage distribution of clinical variables. In regards to age, 50% of antenatal mothers were between 23-26 years. In weight distribution 72% of antenatal mothers belongs to the 65-70kg. In case of height 72% of antenatal mothers were between 151-160cm and 72 % belongs to normal weight, 68% of antenatal mothers belongs to primigravida, 82% of the antenatal mothers belongs to 32-34 weeks of gestation.

**Table 2: Frequency and Percentage Distribution of Demographic Variables**

N=50

Demographic Variables	No.	Percentage
<b>Region</b>		
Urban	29	58
Rural	21	42
<b>Education</b>		
Primary	0	0
Middle school	0	0
High school	10	20
Higher secondary	20	40
Undergraduate	20	40
Postgraduate & above	0	0
<b>Religion</b>		
Hindu	30	60
Christians	15	30
Muslims	5	10
<b>Type of pregnancy</b>		
Planned	4	8
Unplanned	46	92
<b>Family</b>		
Nuclear family	23	46
Joint family	25	50
Extended joint family	2	4
<b>Income per month</b>		
Rs 10000-20000	13	26
Rs 20001-30000	31	62
Rs 30001-40000	2	4
>Rs 4000	4	8
<b>Working pattern</b>		
Skilled	3	6

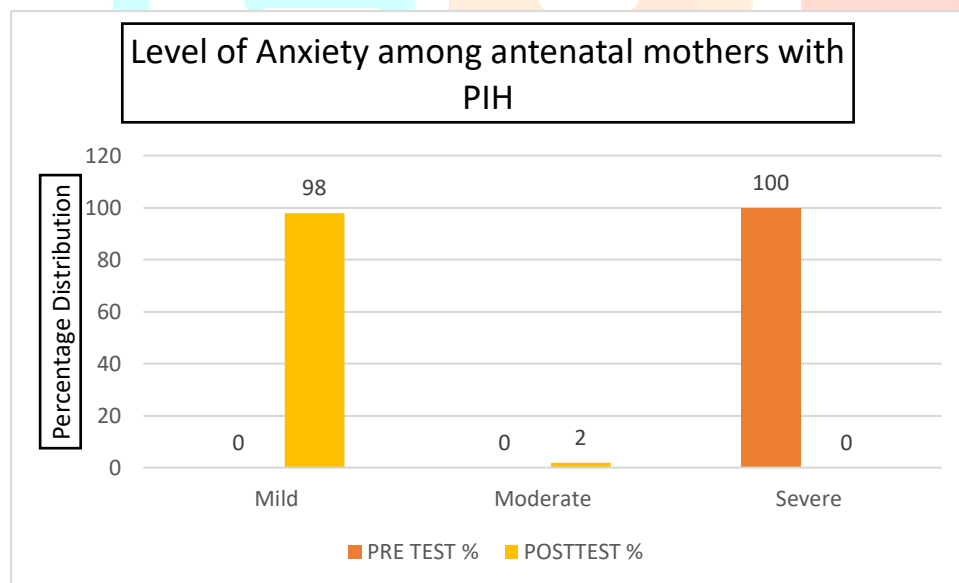
Unskilled	11	22
Housewife	36	72

Table-2 shows frequency and percentage distribution of clinical variables Among all 50 antenatal mothers,58% of antenatal mothers hailing from urban, 40% were undergraduate, 60% of antenatal mothers were Hindu and 92% of antenatal mothers had their pregnancy was planned,50 % were living in joint family.62 % of the mothers family income was Rs 20000-30000 and 72 % of antenatal mothers were housewives.

**Table: 3-Frequency and percentage distribution of level of anxiety in pre-test and post-test**

Level of pregnancy related Anxiety	N=50			
	PRE TEST		POSTTEST	
	No.	%	No.	%
Mild	0	0	49	98
Moderate	0	0	1	2
Severe	50	100	0	0

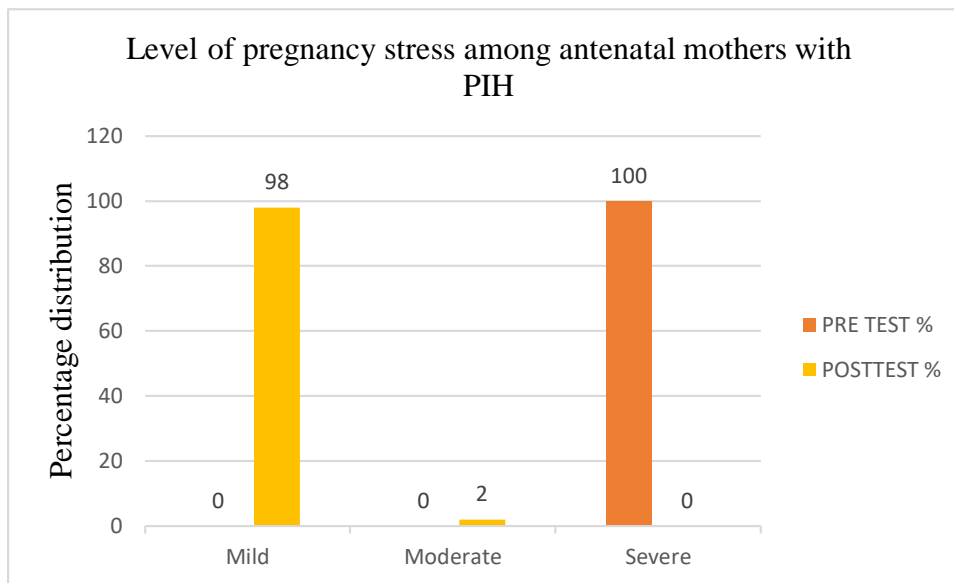
Table 3 and figure 1 shows the frequency and percentage distribution of pregnancy related anxiety in pre test and post test. In pretest all the antenatal mothers 100% had severe anxiety whereas in post test 98% of antenatal mothers had mild anxiety and 2% of antenatal mothers had moderate anxiety after the intervention



**Table: 4-Frequency and percentage distribution of level of stress in pre-test and post-test**

Level of pregnancy related Stress	N=50			
	PRE TEST		POSTTEST	
	No.	%	No.	%
Mild	0	0	40	80
Moderate	8	16	10	20
Severe	42	84	0	0

Table 4 and figure 2 shows the frequency and percentage distribution of level of pregnancy related stress in pre and post test. In pretest 84% of the antenatal mothers had severe level of pregnancy related stress, 16% of the antenatal mothers had moderate level of stress. Whereas in post test 80% of the antenatal mothers had mild level of stress and 20 % of the antenatal mothers had moderate level of stress after the intervention.



**Table-5 The effectiveness of tranquilizing pranayama on psychological parameters among antenatal mothers with Pregnancy Induced Hypertension**

N=50

PSYCHOLOGICAL PARAMETERS	Assessment	Tranquilizing pranayama Group (n = 50)		MD	't' value	p value
		Mean	SD			
Pregnancy-Related Anxiety	Pretest	48.14	0.495	32.36	163.88	<b>0.000** (S)</b>
	Post-test	15.78	1.375			
Pregnancy Stress	Pretest	29.68	0.551	22.16	105.19	<b>0.000** (S)</b>
	Post-test	7.52	1.32			

\*\* S - Significant at  $p < 0.01$

Table 5 shows that there was a significant difference in mean psychological parameters score between pretest and post test. The finding concludes that the tranquilizing pranayama was highly effective on stress and anxiety among antenatal mothers with PIH.

## Discussion

The present study was conducted among 50 antenatal mothers with PIH between 32-34 weeks of gestation. Convenience sampling technique was used to select the antenatal mothers.

The findings as follows.

In regards to age, 50% of antenatal mothers were between 23-26 years. In weight distribution 72% of antenatal mothers belongs to the 65-70kg. In case of height 72% of antenatal mothers were between 151-160cm and 72% belongs to normal weight, 68% of antenatal mothers belongs to primigravida, 82% of the antenatal mothers were in 32-34 weeks of gestation. Among all 50 antenatal mothers, 58% of antenatal mothers hailing from urban, 40% were undergraduate, 60% of antenatal mothers were Hindu and 92% of antenatal mothers had their pregnancy was planned, 50% were living in joint family. 62% of the mothers family income was Rs 20000-30000 and 72% of antenatal mothers were housewives.

The findings were supported by following studies

**Afsaneh Keramat et al (2021)** conducted a descriptive, correlational, cross-sectional study to assess the factors influencing stress and anxiety among Iranian pregnant women. Overall, 295 pregnant women completed a demographics and obstetric information checklist, Depression Anxiety and Stress Scale-21 (DASS-21). Results shows that there is a significant differences in the mean scores of SD between the groups with varying degrees of depression, anxiety, and stress ( $P < 0.001$ ). In multivariate linear regression analysis, higher (worse) depression, anxiety, and stress scores were found in women with more advanced age and higher SD scores; however, these scores were lower (better) in those with increased gestational age. Lower anxiety scores were associated with moderate satisfaction with income, and lower stress scores were linked to planned pregnancy, complication in a previous pregnancy was a predictor of higher stress score, and finally, fear of fetal abortion and being a housewife were predictors of a higher anxiety score.

**L. Cena (2020)** conducted a study to identified the prevalence and risk factors for antenatal anxiety among 432 women at Italy using the Spielberger State-Trait Anxiety Inventory. A total of 1142 pregnant women from nine Italian healthcare centers were assessed. Results shows that the prevalence of anxiety was 24.3% among pregnant women. There was a significantly higher risk of anxiety in pregnant women with low level of education ( $p < 0.01$ ), who are jobless ( $p < 0.01$ ), and who have economic problems ( $p < 0.01$ ). Furthermore, pregnant women experience higher level of anxiety when they have not planned the pregnancy ( $p < 0.01$ ).

In pretest all mothers had severe anxiety whereas in post test 98% had mild anxiety and 2% had moderate anxiety. In pretest 84% of the antenatal mothers had severe level of pregnancy related stress, 16% had moderate level of stress. 80% of the mothers had mild level of stress and 20% had moderate level of stress in post-test. There is a significant mean difference in level of pregnancy related anxiety between pretest and post-test at  $p > 0.005$  and there is a significant mean difference in level of pregnancy stress at  $p > 0.005$ .

The findings were supported by following studies

**Binita sakota et.al(2019)** conducted a descriptive cross-sectional study to identify the Prenatal anxiety among 337 Pregnant Women visiting the Antenatal Care outpatient department Paropakar Maternity and Women's Hospital, Thapathali, Kathmandu, Nepal. Prenatal Anxiety Scale was used for data collection. The findings revealed that 39.5% were Primigravida, less than 50% of respondents had minimal anxiety, 42.1% had mild to moderate anxiety and least (16.9%) of the respondents had severe anxiety.

**Dr.Santhi Latha (2021)** conducted an experimental study to assess the Effect of yoga on stress among third trimester Primigravida mother at antenatal clinic of Kanyakumari medical college hospital, Nagercoil. About 60 antenatal mothers selected by simple random sampling technique, two group pretest- post test experimental design was used to conduct the study. The study findings revealed that there was significant difference found between experimental and control group. The pre test mean stress score in experimental group and control group were 38.1+ 8.2, 32.7+ 9.2. The Post test mean stress severe was 2.6 + 2.2 , 32.05 + 9.0 and the  $t= 22.75, p < 0.001$ . Hence yoga found to be an effective complementary alternative therapy to reduce stress among third trimester primigravida mothers.

### Conclusion

The present study findings conclude that tranquilizing pranayama was cost effective and simple to practice which had positive influence on reducing stress and anxiety among antenatal mothers with PIH without side effect.

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