

# Effectiveness of Benson's Relaxation Therapy on Reduction of Stress among Primigravid Mothers

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## ABSTRACT

**Objectives:** The study attempt to assess the effectiveness of Benson's relaxation therapy on reduction of stress among primigravid mothers attending the outpatient department in a selected hospital at Kannur, with the objectives of evaluating the stress among the primigravid mothers before and after the Benson's relaxation therapy and to associate the level of stress with selected demographic variables. **Methods:** A total of 30 primigravid mothers after third month of gestation were selected for the study. The information regarding background data were collected from the primigravid mothers by self-administered rating scale and the level of hemoglobin status was noted from the health records. Selected primigravid mothers were given pretest questionnaire and Benson's relaxation therapy was administered to all group members for 20 minutes and instructed to continue this for a period of 15 days. Post-test using rating scale was conducted 15 days after the administration of Benson's relaxation therapy. **Result:** The result of the study shows that the post-test mean stress score was less than the pre-test mean stress score. The obtained mean difference between the pre-test and post-test regarding stress score was statistically significant. Hence research hypothesis "there will be a significant difference in the stress scores before and after Benson's relaxation therapy among the primigravid mothers" has been retained. **Conclusions:** It was inferred that primigravid mothers who practiced Benson's relaxation therapy had significant decrease in post-test stress score. Also there was significant association with the level of stress and some demographic variables.

## INTRODUCTION

Pregnancy and childbirth are normal life events, yet women are exposed to a significant amount of stress. The reasons for unhappiness in some women's lives are related to poor socio-economic status, lack of social support and domestic violence.<sup>1</sup> Many mothers also experience unnecessary distress and anxiety simply because they did not anticipate or did not know about the normal psychological upheavals, emotional changes and the adjustments required that are integral to the childbearing process.<sup>2</sup> A decreased maternal workload, family spacing, availability of rest and easy access to supportive people and environmental resources are

perceived as markers of good health.<sup>3</sup> How one reacts to stress depends on how one perceives the stressful event, the stressor or the degrees of change caused by it, and one's ability to adapt which is determined by one's health, genetic endowment and available coping mechanisms.<sup>4</sup> Herbert Benson MD, is the father of modern mind-body medicine. From the late 1960 onwards he demonstrated that the relaxation response, which brings about bodily changes that decrease heart rate, lower metabolism, decrease the rate of breathing and bring the body back into what is probably a healthier balance.<sup>5</sup> A number of stress reduction techniques have been used successfully in pregnancy. These include biofeedback, meditation, guided mental imagery and yoga (specific type for pregnant women).<sup>6</sup>

## Need and Significance of the Study

Stress, however, does not have to be all bad, when managed properly, stress can provide as with the drive to meet new challenges.<sup>7</sup> Arbor A reported that one in five pregnant women may be experiencing symptoms of stress, but only few are getting help for it. The numbers

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are even higher in women with a history of stress any time before their pregnancy.<sup>8</sup>

The need for the study arises from the fact that prior studies have indicated that depression and anxiety during pregnancy affect neonatal outcome. During our experience in the antenatal ward, we have seen the primigravid mothers experiencing stress and facing complications such as low birth weight babies, premature rupture of membrane etc. In this study it is aimed to analyze the process of stress and provide appropriate interventions to reduce stress among primigravid mothers. To evaluate the stress among the primigravid mothers before and after the Benson's relaxation therapy, Also to associate the level of stress with selected demographic variables.

Based on the objectives of the study the following hypotheses have been formulated for the purpose of the study.

H<sub>1</sub>: There will be a significant difference in the stress scores before and after Benson's relaxation therapy among the primigravid mothers.

H<sub>2</sub>: There will be a significant association with level of stress in relation to selected demographic variables (Age, Gestational age, family support, education, Economic status, occupation, working hours, minor disorders, current hemoglobin status.) among the primigravid mothers.

In this study, the literature review helped us to gain deeper insight into the research problem and into the different methods of relaxation therapies that reduces the stress among primigravid mothers. There are different significant factors that influences stress among primigravid mothers. Very limited studies have been found on the problem in state of Kerala. Hence we selected the present problem for investigation.

## MATERIALS & METHODS

We selected the Quasi-experimental design (the one group pretest-post-test design), there is a treatment group without a control group. All the subjects are given a pretest, receive the treatment and given a post-test. In the absence of a control group, subjects act as their own controls and pre-treatment and post-treatment data are analyzed for differences.<sup>9</sup> Subjects were selected by convenient sampling method. Mothers were assessed for stress (pretest), and received the Benson's relaxation therapy. The same group is assessed again for stress (post-test) to determine the effect of the treatment.<sup>10</sup> The study was conducted among the outpatient department of Fathima hospital, Kannur, Kerala, India. Exclusion criteria were mothers who are practicing other types of breathing

exercises and primigravid mothers who are suffering from other health problems.

In the present study the following tools have been employed for data collection. 1. Socio demographic questionnaire, 2. Modified Stress scale.

Sociodemographic questionnaire: The questionnaire was consisted of 9 items seeking general information about primigravid mothers like, age of the mother, gestational age, education, economic status and occupation, duration of work, family support, minor disorders and recent haemoglobin status. It was a self-administered questionnaire. Instructions were given to the mothers for using the questionnaire.

Modified Stress scale: It consisted of 42 items to assess the stress of primigravid mothers. It was a self-administered rating scale. Instructions were given to the mothers for using the stress scale. The responses ranged from 'Never' to 'Almost often'. Level of stress was measured in terms of stress score. Stress could be scored as almost often-3, Sometime-2, almost never-1 and Never-0. Maximum stress score was 126.

In the present study, 9 experts including three clinical obstetrician, 4 nursing experts, one psychologist, and one statistician validated the entire section of the tool. The experts were requested to check the relevance of the items in the tool namely socio demographic variables and stress scale. Experts accepted the tool with some modification in demographic variables. The tool was first drafted in English; later, Malayalam translation was done and thus language validity was established.<sup>11</sup> The reliability of the tool for the present study was established by Karl Pearson's correlation coefficient method<sup>12</sup> among 5 antenatal mothers. The reliability of the scale has been found to be very high as evidenced by a higher value of  $r=0.947$

Description of Benson's relaxation therapy: Benson's relaxation therapy is a technique, which includes deep relaxation, slowed heartbeat and breathing, reduced oxygen consumption and increased skin resistance. The Benson's relaxation therapy was demonstrated by the investigator and also shown on the video CD. The investigator had performed the relaxation therapy and prerecorded it on video CD along with adequate explanations of each step in Malayalam (local language). Four nursing experts, 1 psychologist and 3 clinical obstetricians have validated the video CD. After making appropriate modifications the content was finalized. The average time taken to teach the Benson's relaxation therapy was around 20 minutes.<sup>5</sup>

### Data Collection Procedure

The data was collected for four weeks in the month of February-march 2012. Prior permission from the authorities was sought and obtained. Individual informed consent was taken from the study subjects also. The study subjects were selected by convenient sampling method based on sample selection criteria.

A total of 30 primigravid mothers after third month of gestation were recruited for the study. The objectives and the purpose of the study were explained and confidentiality was maintained. The information regarding background data were collected from the primigravid mothers by self-administered rating scale and the level of haemoglobin status was noted from the health records respectively.

Selected primigravid mothers were given pretest questionnaire and Benson's relaxation therapy was administered to all group members for 20 minutes and instructed to continue this for a period of 15 days. Post-test using rating scale was conducted 15 days after the administration of Benson's relaxation therapy. The rating scale used was checked for their completeness.

The data obtained were compiled and analyzed using descriptive and inferential statistical analysis.<sup>13</sup> The level of significance adopted was 0.05. Plan for data analyzes were as follows:

Distributions of samples according to background factors were explained using frequency and percentage.

The stress among the antenatal mothers before and after Benson's relaxation therapy was analyzed using paired 't' test.<sup>14</sup>

The association between stress after Benson's relaxation therapy among the antenatal mothers and their selected background factors were analyzed using linear regression.<sup>15</sup>

## RESULTS

Data on stress before and after Benson's relaxation therapy among primigravid mothers.

From Table 1 or Figure 1, it can be seen that the stress in the age group of 19-25 years and 26-35 years significant difference between the pre test and post test scores. This indicates that Benson's relaxation therapy was effective in these age groups. But in the age group above 35 years did not show any significant difference so it may be assumed that Benson's relaxation therapy have lesser effect as the age advances.

### Gestational Age

Table 2 or Figure 2 shows that the stress in the gestational age of 13-24 weeks, 25-36 weeks and >36 weeks shows significant difference between the pretest and post test scores. This indicates that Benson's relaxation therapy was effective in these gestational ages.

### Level of Education

Table 3 or Figure 3 shows that the stress in secondary, graduate and post graduate level of education shows a significant difference between the pretest and post test

**Table 1: Mean pre test and post test scores of stress among different age groups of primigravid mothers - Age**

Group (years)	N	Pre test		Post test		t' value
		Mean	SD	Mean	SD	
19-25	19	30.4737	14.01336	19.4737	8.37568	7.113**
26-35	9	16.6667	9.93730	12.1111	7.25335	2.641**
>35	2	30.5000	13.43503	17.5	3.53553	1.857

\*\*0.01 level signif cant

**Table 2: Mean pre test and post test scores of stress among primigravid mothers - Gestational age**

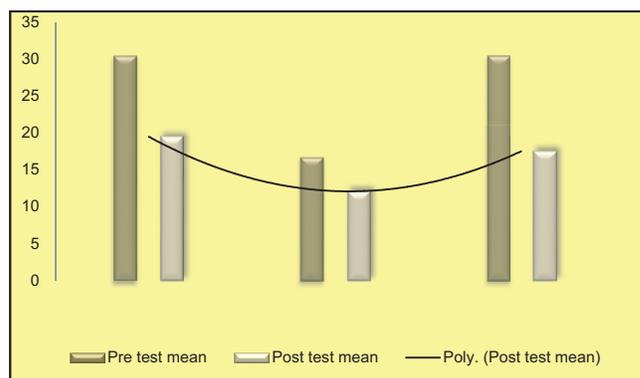
Group	N	Pre test		Post test		t' value
		Mean	SD	Mean	SD	
13-24 wks	10	27.8	13.16392	17.7	7.78959	5.174**
25-36 wks	15	27.8	15.85290	18.2	9.32125	4.445**
Above 36 wks	5	19	8.74643	12.8	6.14003	4.571**

\*\*0.01 level signif cant

**Table 3: Mean pre test and post test scores of stress among primigravid mothers - Levels of education**

Group	N	Pre test		Post test		t' value
		Mean	SD	Mean	SD	
Primary level	1	21	-	15	-	-
Secondary level	5	39.4	16.18023	22.6000	7.33485	3.781**
Under graduate	16	26.875	13.64246	18.4375	9.13578	5.766**
Post graduate	7	16	6.0553	10.1429	2.19306	3.482*
Ph.D	1	30	-	20	-	-

\*0.05 level signif cant, \*\*0.01 level signif cant



**Figure 1: Mean pre test and post test scores of stress among different age groups of primigravid mothers**

**Table 4: Mean pre test and post test scores of stress among primigravid mothers - Economic status**

Group	N	Pre test		Post test		't' value
		Mean	SD	Mean	SD	
Less than 5000/month	07	23.5714	16.27736	16.27736	9.83192	2.913*
5000-10000/month	05	33.2	10.82589	21.6	6.94982	3.897*
10000-20000/month	10	33.2	14.1091	21.4	7.64780	4.454**
Above 20000/month	08	15.875	5.61726	10	2.07020	4.032**

\*0.05 level significant, \*\*0.01 level significant

scores. But in primary and PhD level of education did not show any significant. It indicates that Benson's relaxation therapy is effective in secondary, graduate and post graduate level of education.

### Economic Status

Table 4 or Figure 4 shows that the stress among the all levels of economic status of primigravid mothers shows a significant difference between the pretest and post test scores. It indicates that Benson's relaxation therapy is effective.

### Nature of Occupation

Table 5 or Figure 5 shows that the level of stress among the Government employee did not show any significant difference between the pretest and post test scores. But in private employees and house wives level of stress shows significant difference at the level of 0.01.

### Sources of Emotional Support

Table 6 or Figure 6 shows that the source of support from In-Laws did not show any significant difference between the pretest and post test scores. But support from husband and parents show significant difference.

### Experience of Minor Disorders

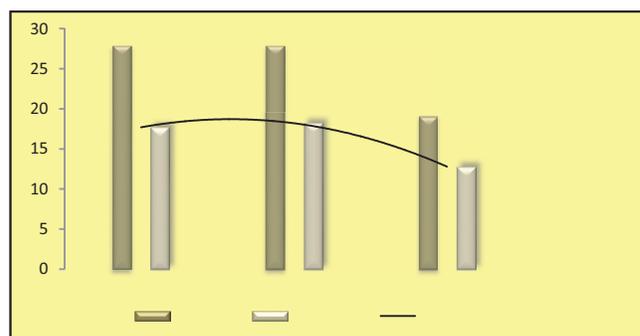
Table 7 or Figure 7 shows minor disorders determine the level of stress among primigravid mothers, and except with palpitation, Benson's relaxation therapy showed significant decrease in stress.

### Haemoglobin Level of Primigravid Mothers

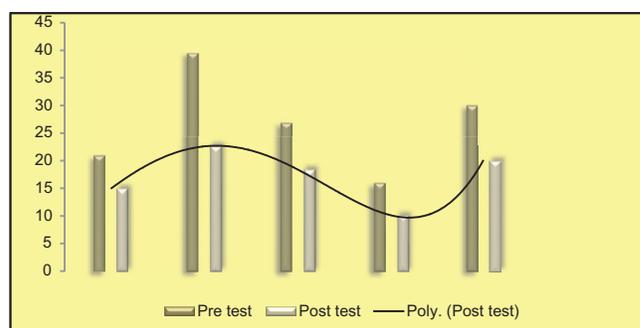
Table 8 or Figure 8 shows that the current hemoglobin level is also determine the level of stress among primigravid mothers. But Benson's relaxation therapy reduced the stress irrespective of haemoglobin level.

### Stress Scores before and after Benson's Relaxation Therapy

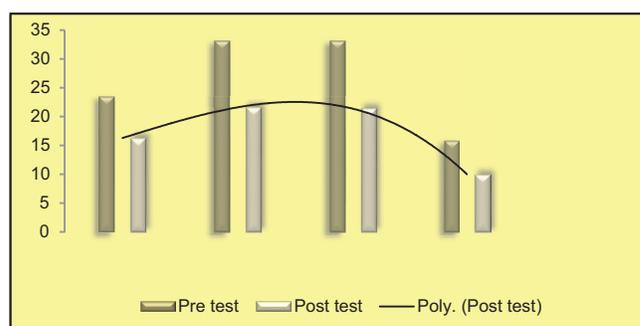
Table 9 or Figure 9 shows the mean, mean difference, standard deviation and 't' value of stress before and after Benson's relaxation therapy among all the primigravid mothers selected for this study. The statistical significance between pretest and posttest support the research hypothesis ( $H_1$ ) and has been retained. It was inferred that primigravid mothers who practiced Benson's relaxation therapy had significant decrease in post-test stress score.



**Figure 2:** Mean pre test and post test scores of stress among primigravid mothers -gestational age



**Figure 3:** Mean pre test and post test scores of stress among primigravid mothers-levels of education



**Figure 4:** Mean pre test and post test scores of stress among primigravid mothers - economic status

Therefore, the Benson's relaxation therapy was effective in reducing the stress level of primigravid mothers.

Table 10 depicts the significant association between stresses after the Benson's relaxation therapy in relation to the background factors among primigravid mothers. Regarding the factors such as gestational age, economic

**Table 5: Mean pre test and post test scores of stress among primigravid mothers - Nature of occupation**

Group	N	Pre test		Post test		't' value
		Mean	SD	Mean	SD	
Govt. employee	01	15	-	8	-	-
Private employee	07	31.4286	11.84423	20.5714	7.84978	3.892**
House wife	22	25.2273	14.86375	16.4545	8.39913	5.792**

\*\*0.01 level significant

**Table 6: Mean pre test and post test scores of stress among primigravid mothers - Sources of emotional support**

Group	N	Pre test		Post test		't' value
		Mean	SD	Mean	SD	
Husband	26	25.8462	14.44906	16.5385	8.27155	6.417**
In-Laws	2	31.5	19.09188	24.0000	12.72792	1.667
Parents	2	27.5	7.77817	18.0000	7.07107	19*

\*\*0.01 level significant\*0.05 level significant

**Table 7: Mean pre test and post test scores of stress among primigravid mothers - Experience of minor disorders**

Group	N	Pre test		Post test		't' value
		Mean	SD	Mean	SD	
Nausea and vomiting	8	18.375	15.89193	17.6250	8.84691	4.129**
Fainting	3	23	9.16515	15.3333	7.50555	6.379**
Palpitation	4	23	14.49138	15.2500	9.25113	2.85
Leg cramps	7	25.1429	13.33452	16.4286	8.67673	3.387*
Back ache	8	28.25	16.57666	18.8750	9.29574	2.813*

\*\*0.01 level significant\*0.05 level significant

status, nature of occupation, psychological support, minor disorders, and recent haemoglobin status, were not significant in post test stress score among the primigravid mothers.

Factors such as the age and education, during pregnancy were significantly ( $P < 0.01$ ) associated with stress of the primigravid mothers. But working hours did not show any significance in relation to post test scores among primigravid mothers, it could not be calculated, everyone was working for less than 8 hours.

The regression shows that Age and Educational status have significant association with the level of stress among primigravid mothers.<sup>16</sup> Hence the research hypothesis ( $H_2$ ) is partially accepted.

## DISCUSSION

The first objective of the study is to evaluate the stress among the primigravid mothers before and after the Benson's relaxation therapy. In the present study the mean pretest scores of stress among primigravid mother is  $26.33 \pm 14.028$  while the mean posttest stress score

**Table 8: Mean pre test and post test scores of stress among primigravid mothers - Haemoglobin level of primigravid mothers**

Group	N	Pre test		Post test		't' value
		Mean	SD	Mean	SD	
7-11 gm%	24	29.0417	14.26299	18.8333	8.36487	6.672**
>12 gm%	6	15.5	5.43139	10.3333	3.77712	4.795**

\*\*0.01 level significant

**Table 9: Mean, mean difference, standard deviation and 't' value on stress scores before and after Benson's relaxation therapy among primigravid mothers - Stress scores before and after Benson's relaxation therapy**

Test	Stress			't' value
	Mean	SD	Range	
Pre test	26.333	14.028	51	7.214** (Sig.)
Post-test	17.133	8.361	27	
Mean Diff.	9.2	6.984		

\*\* Significant at 0.01 level (N=30)

**Table 10: Association between the stress and selected demographic variables**

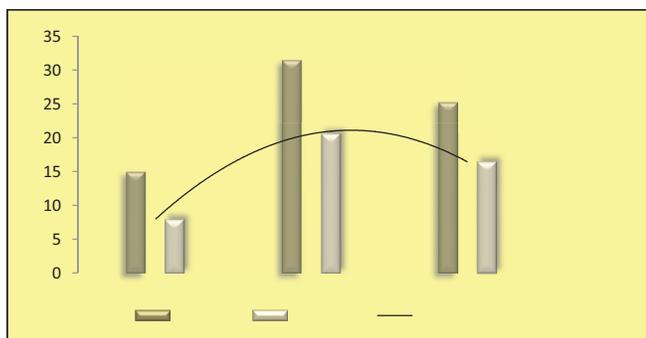
Sl. no	Background factors	Standardized coefficients (beta)	't'	Significance
1	Age	0.485	2.526	0.02*
2	Gestational age	0.038	0.177	0.861
3	Education	0.674	2.715	0.013*
4	Economic status	0.307	1.377	0.183
5	Nature of occupation	0.290	1.580	0.129
6	Hours of work/day	-	-	-
7	Psychological support	0.161	0.872	0.393
8	Minor disorders during pregnancy	0.037	0.186	0.854
9	Recent haemoglobin status	0.299	1.562	0.133

\*Significant (N=30)

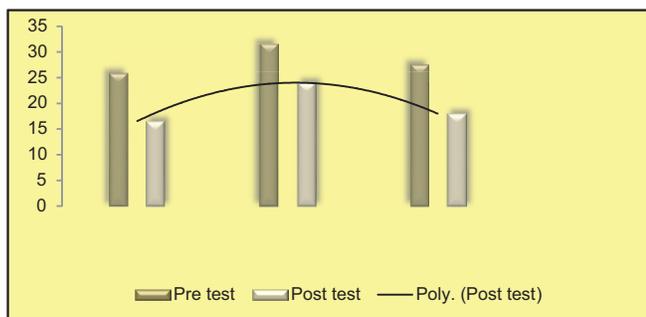
has been reduced to  $17.333 \pm 8.361$ . The study shows that the level of stress among primigravid mothers was significantly reduced after practicing Benson's relaxation therapy.

The above findings were supported by the related study conducted by Bastani F, et. al<sup>17</sup> (2005), who reported significant reduction in stress scores after relaxation therapy among the primigravid mothers of mean age 23.8 years and mean gestational age of 17.8 weeks. One hundred ten primigravid women were randomly assigned into experimental and control groups. It proves that teaching relaxation techniques could serve as a resource for improving maternal psychological health.

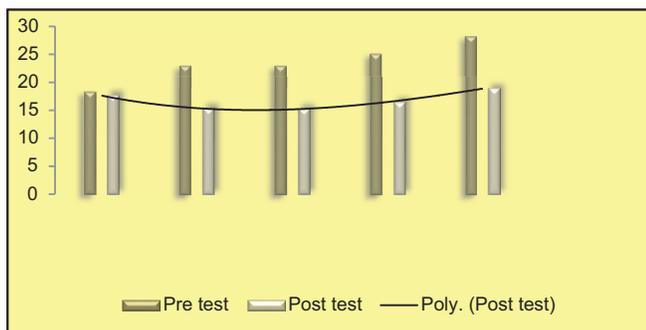
There for in this present study it has been inferred that there is significant difference in the stress scores before and after Benson's relaxation therapy hence the research hypothesis ( $H_1$ ) has been retained.



**Figure 5:** Mean pre test and post test scores of stress among primigravida mothers -nature of occupation



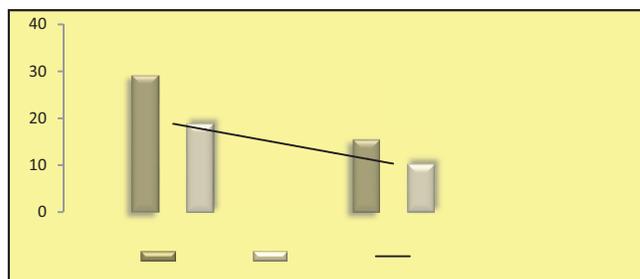
**Figure 6:** Mean pre test and post test scores of stress among primigravida mothers- sources of emotional support



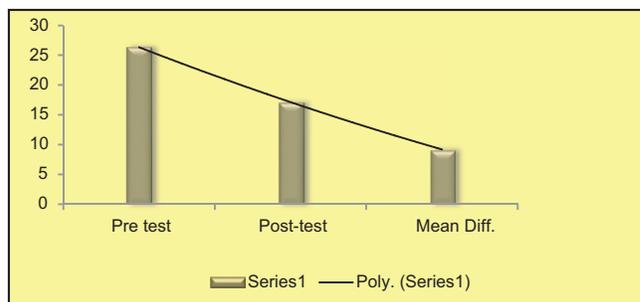
**Figure 7:** Mean pre test and post test scores of stress among primigravida mothers experience of minor disorders

The second objective of the study is to associate the level of stress with selected demographic variables. Analysis shows that the Benson's relaxation therapy is effective in reducing the stress level of primigravida mothers belonging to different age group. In the present study primigravida mothers belonging to 19-25 years of age, and also the age group 26-35 years, significant difference were observed, but in the age group above 35 years the Benson's relaxation therapy is not statistically significant.

Hence it is evidenced that Benson's relaxation therapy is effective in reducing stress level of primigravida mothers belonging to different level of age group, but it is assumed that as the age advances the therapy is less effective.



**Figure 8:** Mean pre test and post test scores of stress among primigravida mothers- haemoglobin level



**Figure 9:** mean, mean difference on stress scores before and after benson's relaxation therapy among primigravida mothers

The present study shows that stress among primigravida mothers belongs to different gestational age. The result of significance of the difference between the mean stress scores of primigravida mothers during second and third trimester (13-24weeks, 25-36weeks) and in posttest, the significant difference is seen in third trimester, than 13-25 and above 36 weeks.

So it is inferred that the stress is more in second and third trimester, but the effectiveness of the Benson's relaxation therapy is more in third trimester. The present study is supported by Morning and Kathryn(2010) identifies that primigravida mother experienced significantly more stress, disturbed sleep, with sleep efficiency falling from 89.79% in the third trimester to 77.25%, increase in fatigue in primigravida mother indicates that health professionals need to provide anticipatory guidance like relaxation techniques to primigravida mother to help smooth transition to motherhood and prevent stress and other complications like low birth weight babies and premature rupture of membrane.<sup>18</sup>

Analysis shows that the Benson's relaxation therapy is effective in reducing the stress level of primigravida mothers belonging to different levels of education. It is identified that the mean stress scores in the pretest of primigravida mother belonging to secondary level of education, were significantly different from posttest score. The educational status is highly influencing the stress level of primigravida mothers.

Hence it is inferred that Benson's relaxation therapy is effective in reducing stress experienced by primigravid mothers belonging to secondary, graduate and post graduate level of education and shows a significant difference.

The analysis shows that the mean stress scores in the pretest and the post test of primigravid mothers belonging to different economic status. The significant difference is seen in primigravid mothers belonging to the economic status less than 5000/month. It is evident that the economic status of primigravid mother is influencing the level of stress. This study is supporting by Sopen Kunsrikoaw Chunuan, Sasikarn Kala (2004) determine, three predictor variables; number of social support persons, family income per month, and marital status significantly influenced the pregnant women stress.<sup>19</sup> The present study concluded that stress during pregnancy and intrapartum affects the childbirth outcomes and also suggest that to reduce the stress and quality of child birth care, all nurses should evaluate level of stress and potential factors that may influence women stress during pregnancy.

The analysis identified that the mean stress scores among primigravid mothers belongs to nature of occupation. The mean pretest stress score of private employees shows significant reduction in posttest. Hence it is concluded that the level of stress in private employee shows a significant difference and Benson's relaxation therapy is useful in reducing stress among primigravid mothers.

The present study shows that the test of significance of the difference between the mean stress scores of pretest and posttest of primigravid mothers belonging to sources of emotional support. It shows that the primigravid mother who got the support from their husband, experiences low level of stress compared to support from friends and parents. Also after the Benson's relaxation treatment primigravid mother experienced low level of stress.

The study shows that the stress among primigravid mothers having experiencing different minor disorders have significant effect on the level of stress except palpitation; the obtained t value is not significant. Here also Benson's relaxation therapy is useful in reducing stress among primigravid mothers.

It is inferred that the mean stress scores among primigravid mothers having the haemoglobin of 7-11% and haemoglobin more than 12gm% have significant difference between pre and posttest scores. Haemoglobin is also an influencing factor of stress during pregnancy and Benson's relaxation therapy is effective in reducing it.

Benson's relaxation therapy helps to reduce the stress among primigravid mothers.<sup>12</sup> in the present study age, gestational age, education, socioeconomic status, nature of occupation, minor disorders, are influencing the level of stress among primigravid mother.

The study shows there is a significant association with the level of stress and selected demographic variables like age and educational status but in relation to working hours it is not significant. It may be due to less number of samples belongs to that category and also other variables like gestational age, occupation, economic status, family support and current haemoglobin status did not show any significant association. There for the research hypothesis (H<sub>2</sub>) has been partially retained.<sup>20</sup>

## CONCLUSION

Stress during pregnancy causes untoward complications like low birth weight babies, premature rupture of membrane and fetal morbidity. If it handles properly it reduces the complications to a great extent. In this study researcher try to find out the factors that influencing stress during pregnancy and proved that the effectiveness of Benson's relaxation therapy.

Investigator selected thirty primigravid mothers by following selection criteria, Performed pretest. In this assessment it is inferred that most of the primigravid mothers experiencing stress. Treatment given by demonstration (investigator demonstrated self) and also with the help of video CD. Instruct them to practice for two weeks. Posttest has been conducted after two weeks and results were analyzed.

All the variables are statistically significant with post test scores of primigravid mothers, except hours of work. In hours of work all primigravid mothers doing their work below eight hours. So difference cannot be calculated.

Hence it is concluded that stress during pregnancy is influenced by different variables and Benson's relaxation therapy is effective in reducing stress in primigravid mothers.

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