



## **A quasi experimental study to assess the effectiveness of chromotherapy on level of stress among high risk primigravida mother during pregnancy admitted at selected Hospital of Delhi**

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### **Abstract**

A Quasi Experimental Study to Assess the Effectiveness of Chromotherapy on Level of Stress during Pregnancy among High Risk Primigravida Mother at Selected Hospital of Delhi for the partial fulfilment of the requirement for the degree of master of nursing at Nightingale Institute of Nursing, under Chaudhary Charan Singh University of Meerut, Uttar Pradesh the year 2019-2020. This study was conducted on 40 high risk primigravida mother having stress during pregnancy at Hindu rao hospital, Delhi. The objective of the study was to evaluate the effectiveness of chromotherapy on the level of stress during pregnancy among high risk primigravida mother in experimental group. The research approach for the study was quantitative in nature. The research design used was quasi experimental pre-test post-test research design. The sample was selected by purposive sampling technique, descriptive and inferential statistics were used for the data analysis. The mean posttest of high risk primigravida mother is 24.4 in experimental group is less than the control group mean posttest is 58.35. The obtained mean difference was found to be statistically significant at 0.05 level. The calculated unpaired "t" value is 14.02 at 0.05 level of significance which is higher than the table value at df (38). The fisher exact test value obtained to find out association between post score of high risk primigravida mother receiving chromotherapy with demographic variable, on computation it was found that there was no significant association between post test score of high risk primigravida mother in experimental group with demographic variables at 0.05 level of significance. This study concluded that administration of chromotherapy was effective in reducing level of stress during pregnancy among high risk primigravida mother at selected hospital of Delhi.

**Keywords:** chromotherapy, modified perceived stress scale (PSS), high risk primigravida mothers, level of stress

### **Introduction**

**"Motherhood is a gift of God to women."**

Pregnancy is supposed to be a time of emotional well-being in a woman's life, but for many women, this is a time of confusion, fear, sadness, anxiety, stress, and even depression. Mental health, in spite of being an important component of reproductive health, is often neglected. Moreover, in the absence of systematic screening, most antenatal mental disorders are not detected. Stress in pregnancy may diminish one's capacity for self-care, precipitating inadequate nutrition, drug or alcohol abuse, and poor antenatal clinic attendance, all of which may compromise a woman's physical and mental health, may reduce optimal fetal monitoring, and might restrict the growth and development of the fetus. Stress during pregnancy has been found to be associated with depression as well as adverse pregnancy outcomes.

### **Need for the Study**

**"Positive mind+ positive vibes= positive pregnancy"**

Child birth is one of the most marvelous and memorable segment in women's life. Color therapy relies on the premise that each color is associated with a different bodily response. For example, red is typically associated with stimulation, while blue is considered a mentally relaxing color. Color has been used to treat all kinds of medical conditions since ancient times. Color light therapy history dates back to ancient Egypt, India, China, and even as far back as the Mayan culture. Now, the medical benefits of

color light therapy are being investigated and implemented in major hospitals and medical research centers worldwide. The stress about child birth often prevents most women from enjoying this experience. Labor pain ranges widely from woman to woman and even from pregnancy. According to the American College of Obstetricians and Gynecologists, between 14% and 23% of women will struggle with some symptoms of stress and anxiety during pregnancy. The prevalence of depression, anxiety, and stress was found to be 25.5%, 63%, and 23%, respectively. Color is used to balance energy wherever our bodies are lacking, be it physical, emotional, spiritual, or mental. The history of color therapy is very ancient. The use of color as a therapy is a truly holistic, non-invasive and powerful therapy which dates back thousands of years; evidence of this can be found in ancient texts from India, China and Egypt.

### **Statement of the Problem**

A Quasi experimental study to assess the effectiveness of chromotherapy on level of stress among high risk primigravida mother during pregnancy admitted at selected hospital of Delhi.

### **Objectives of the Study**

- To assess the level of stress among high risk primigravida mother during pregnancy in control group.
- To assess the level of stress among high risk primigravida mothers during pregnancy in experimental group.

- To assess the effectiveness of chromotherapy on level of stress among high risk primigravida mother during pregnancy in experimental group.
- To compare the difference between post-test levels of stress among high risk primigravida mother during pregnancy in control and experimental group.
- To determine the association between post-test levels of stress among high primigravida mother during pregnancy in experimental group with selected demographic variables.

### Hypothesis of the Study

- **H<sub>1</sub>:** There will be significant difference between pre-test and post-test score on level of stress among high risk primigravida mothers during pregnancy in experimental group at 0.05 level of significance.
- **H<sub>2</sub>:** There will be significant difference between post-test level of stress among high risk primigravida mothers during pregnancy in control and experimental group at 0.05 level of significance.
- **H<sub>3</sub>:** There will be significant association between post-test score on level of stress among high risk primigravida mothers during pregnancy with selected demographic variables at 0.05 level of significance.

### Methodology

**Research Approach:** Quantitative Research Approach

**Research Design:** Quasi-experimental pre-test post-test research design

**Attribute Variable:** Age, Education, Occupation, Religion, Type of Family, Monthly income, Trimester, Medical condition during pregnancy, Taking treatment for medical condition, practicing any of alternative therapy

**Independent Variable:** Chromotherapy

**Dependent Variable:** Level of stress among high risk primigravida mothers during pregnancy.

**Sample:** High risk primigravida mother in selected hospital

**Sample Size:** The sample size is 40

**Population:** High risk primigravida mothers

**Study Setting:** Hindu rao hospital, Delhi

**Sampling Technique:** Purposive Sampling Technique

**Data Collection Tool and Technique:** Demographic data and Modified Perceived stress scale (PSS)

### Description and Development of Structured Interview Schedule

Polit and Hungler stated that the interview is a relatively simple method for obtaining data and least time consuming. The structured items are efficient, easy to administer and analyze.

### Description of the Tool

In order to determine and compare the effectiveness of chromotherapy in terms of reducing the level of stress

among high risk primigravida women using Modified perceived stress scale (PSS). For convenience sake the tool is divided into two categories which are as follows:

- Tool I: Demographic data
- Tool II: Modified perceived stress scale (PSS)

### Tool I- Demographic data

It consists of 10 items such as- Age, Education, Occupation, Religion, Type of Family, Monthly income, Trimester, Medical condition during pregnancy, Taking treatment for medical condition, Practicing any of alternative therapy

### Tool II- Modified Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress.

The Modified perceived stress scale is used for pregnancy women to assess the stress in primigravida mothers who having medical condition during pregnancy.

The questions in this scale ask you about your feelings and thoughts. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

Name \_\_\_\_\_ Date \_\_\_\_\_  
Age \_\_\_\_\_

- 0 = Never
- 1 = Almost Never
- 2 = Sometimes
- 3 = Fairly Often
- 4 = Very Often

### Scores

- Scores ranging from 0-20 would be considered low stress.
- Scores ranging from 21-40 would be considered moderate stress.
- Scores ranging from 41-60 would be considered high stress.
- Scores ranging from 61-80 would be considered severe stress.

The Perceived Stress Scale is interesting and important because your perception of what is happening in your life is most important.

### Organization of the Data

The findings are presented according to the objectives set for the study. The data are organized under the following headings.

- **Section I:** Findings related to frequency and percentage distribution of level of stress among high risk primigravida mothers during pregnancy in terms of demographic variables.
- **Section II:** Findings related to assessment of level of stress among high risk primigravida mothers during pregnancy in experimental group before and after administration of chromotherapy.
- **Section III:** Findings related to comparison of post-test

level of stress among high risk primigravida mothers during pregnancy in control and experimental group.

- **Section IV:** Findings related to association between post-test level of stress among high risk primigravida mothers during pregnancy in experimental group with demographic variables.

**Result and Discussion**

**Section I:** Findings related to frequency and percentage distribution of level of stress among high risk primigravida mothers during pregnancy in terms of demographic variables

- Considering the age in experimental group majority of the i.e 70% (14) of high risk primigravida mothers were under the age category of 24-29 years where as in control group it was 65%(13) of high risk primigravida mothers were under the age category of 18-23 years.
- Regarding the education in experimental group majority of the i.e 40% (8) of high risk primigravida mothers were received no formal education, where as in control group it was 50%(10) of high risk primigravida mothers were received no formal education.
- Considering the occupation in experimental group majority of the i.e 50% (10) of high risk primigravida mothers were home maker, where as in control group it was 60% (12) of high risk primigravida mothers were home maker.
- Regarding the religion in experimental group majority of the i.e 65% (13) of high risk primigravida mothers were muslim, where as in control group it was 50% (10) of high risk primigravida mothers were hindu and 50% (10) high risk primigravida mothers were muslim.
- Regarding the type of family in experimental group majority of the i.e 40% (8) of high risk primigravidat mothers were living in joint family, where as in control group it was 60% (12) of high risk primigravida mothers were living in nuclear family.
- Considering the monthly income in experimental group majority of the i.e 60% (12) of high risk primigravida mothers were 10001-15,000, where as in control group it was 45% (9) of high risk primigravida mothers were 16,001-20,000.
- Regarding the trimester in experimental group majority

of the i.e 65% (13) of risk primigravida mothers in 2<sup>nd</sup> trimester, where as in control group it was 55% (11) of high risk primigravida mothers in 3<sup>rd</sup> trimester.

- Considering the medical condition during pregnancy in experimental group majority of the i.e 40% (8) of high risk primigravida mothers were Diabetes and others where as in control group it was 35% (7) of high risk primigravida mothers were Diabetes.
- Regarding the any treatment for medical condition in experimental group i.e 100% (20) of high risk primigravida mothers were not taking medical treatment. Where as in control group it was 100% (20) of high risk primigravida mothers were not taking medical treatment.
- Regarding the practicing any of alternative therapy in experimental group i.e 100% (20) of high risk primigravida mothers were not taking any alternative therapy. Where as in control group it was 100% (20) were not taking any alternative therapy.

**Section II:** Findings related to assessment of level of stress among high risk primigravida mothers during pregnancy in experimental group before and after administration of chromotherapy. The data represented in Table 4 of control group indicates that the mean stress of high risk primigravida mothers score in pretest was 48.55, with standard deviation 14.9. The mean stress of high risk primigravida mothers score in post-test was 58.35, with standard deviation 9.97. The data represented in Table 5 of experimental group indicates that the mean stress of high risk primigravida mothers score in pretest was 57.85, with standard deviation 8.29. The mean stress of high risk primigravida mothers score in posttest was 24.4. With standard deviation 4.24. In experimental group, the obtained mean difference was found to be statistically significant as evident from the "t" value of 43.02 which is higher than the table value (2.09). df (19)=2.09 at 0.05 level of significance. Hence the null hypothesis (H<sub>01</sub>) was rejected and research hypothesis (H<sub>1</sub>) was accepted. Thus it was evident that there is a significant difference between the control and experimental group stress among high risk primigravida mothers during pregnancy.

**Table 1**

Grading	Stress score	Pre test		Post test	
		Frequency	Percentage%	Frequency	Percentage%
Low stress	0-20	0	0	7	35
Moderate stress	21-40	2	10	13	65
High stress	41-60	9	45	0	0
Severe Stress	61-80	9	45	0	0

N=20

**Table 2:** Mean, Median, Standard Deviation and T Value in Experimental Group

Experimental Group	Stress score	Mean	Median	Mean difference	Standard Deviation	T value	
	Pre test	57.85	59		33		8.29
	Post test	24.4	25.5				4.24

N=20

Df (19) = 2.09 at 0.05 level of significance

**Section III:** Findings related to comparison of posttest level of stress in high risk primigravida mothers in control and experimental group. The data represented in Table-6 represents that there is significant difference between

posttest level of stress among high risk primigravida mothers during pregnancy in control and experimental group. Hence null hypothesis (h<sub>02</sub>) is rejected and research hypothesis is accepted (H<sub>2</sub>) at 0.05 level of significance.

Table 3

N=40

Experimental group						Control group					
Grading	Stress score	Pre test		Post test		Grading	Stress score	Pre test		Post test	
		Frequency	Percentage%	Frequency	Percentage%			Frequency	Percentage%	Frequency	Percentage%
Low Stress	0-20	0	0	7	35	Low stress	0-20	1	5	0	0
Moderate Stress	21-40	2	10	13	65	Moderate stress	21-40	5	25	2	10
High Stress	41-60	9	45	0	0	High stress	41-60	10	50	9	45
Severe Stress	61-80	9	45	0	0	Severe stress	61-80	4	20	9	45

Table 4: Mean, Median, Standard Deviation and T Value of Post Test Stress Score in Control and Experimental Group

N=40

Stress score	Mean	Median	Mean difference	Standard deviation	Unpaired t value
Post Test of Control Group	58.35	58.5	33.95	9.97	14.02
Post Test of Experimental Group	24.4	25.5		4.24	

Df (38) = 2.024 at 0.05 level of significance

- The data represented in Table-6 and 7 represents that there is significant difference between posttest level of stress among high risk primigravida mothers during pregnancy in control and experimental group. Hence null hypothesis ( $H_0$ ) is rejected and research hypothesis is accepted ( $H_2$ ) at 0.05 level of significance.

Thus it was evident that there is a significant difference between the control and experimental group stress among high risk primigravida mothers during pregnancy.

**Section IV:** Findings related to association between posttest levels of stress among high risk primigravida mothers during pregnancy in experimental group with demographic variable.

The fisher exact test value obtained to find out association between post score of high risk primigravida mother receiving chromotherapy with demographic variable, on computation it was found that there was no significant association between post test score of high risk primigravida mother in experimental group with demographic variables at 0.05 level of significance. Hence null hypothesis ( $H_0$ ) is accepted and research hypothesis ( $H_3$ ) is rejected.

**Nursing Implications**

The nurses are part of care team in hospital and community setting for assessing, planning and evaluation the outcome of any kind of treatment to patient. The present study was conducted to assess the effectiveness of chromotherapy on level of stress among high risk primigravida mother during pregnancy admitted at selected hospital of Delhi the finding of the study have several implications in Nursing practice, Nursing research, Nursing administration and Nursing education.

**Nursing Practice**

- The findings of the present study will help the midwives to enlighten their knowledge and practice regarding chromotherapy in terms of reducing the stress among high risk primigravida mothers during pregnancy.
- Midwives should be encouraged to use chromotherapy in term of reducing the stress among high risk primigravida mothers during pregnancy as these are safe, economic, and not having any side effects.
- Chromotherapy can be made to practice as a routine nursing care to reduce the stress.

**Nursing Research**

- There is a need for extensive and intensive research in Non-Pharmacological methods so that strategies for educating nurse regarding chromotherapy can be implemented.
- Adequate knowledge, motivation and encouragement by the management and authorities of the organization can enable various research activities. This could be the quest of many nurses when motivated in indulge in research activity could improve the body of knowledge of the profession.
- This study can be used as an access for further studies.

**Nursing Administration**

- The nursing administration should organize educational programme for the nursing students and nursing staff to update the knowledge related to advanced information regarding chromotherapy in terms of reducing the stress among high risk primigravida mothers during pregnancy.
- Reading materials, reference books and nursing manuals must be made available for the staff regarding stress interventions among high risk mothers for administering evidenced based practices.
- The administrator must see that every nurse have adequate knowledge and skills in giving chromotherapy in terms of reducing the stress among high risk primigravida mothers during pregnancy.

**Nursing Education**

- Specialized courses like chromotherapy can also be introduced to train nurse specialists in the area of obstetrics and gynaecological nursing.
- Nursing curriculum should include these topics to sensitize the student nurse to give chromotherapy as an effective stress management among high risk primigravida mothers during pregnancy.
- Findings of the study will help the nursing students to understand the importance of chromotherapy on level of stress among high risk mothers during pregnancy.

**Limitations**

- The study was limited to high risk primigravida mothers who are having stress during pregnancy
- The study was limited to use only one interventions in order to reduce stress
- The study was limited to give chromotherapy only for

single time in whole day.

- The study was conducted on small sample of patient that is 40 which the generalization of the study.
- The study was limited to Delhi only.

### Recommendations

On the basis of findings of the study, following recommendations are made:

- A similar study can be conducted with larger sample for better generalization.
- This study can be done by maximizing the time and duration of chromotherapy.
- Various other benefits of chromotherapy such as reducing pain, controlling nausea and vomiting in pregnancy, prevention of depression, reducing the duration of labour can be tried out.
- Similar study can be done in different setting to evaluate the finding of the present study.

### Conclusion

The present study aimed to reduce the level of stress among high risk primigravida mothers during pregnancy. Results show that in the study the effectiveness of chromotherapy on level of stress among high risk primigravida mothers during pregnancy at selected hospital of Delhi is effective.

### Suggestions

A similar study can be conducted with larger sample for better generalization. This study can be done by maximizing the time and duration of chromotherapy. Various other benefits of chromotherapy such as reducing pain, controlling nausea and vomiting in pregnancy, prevention of depression, reducing the duration of labour can be tried out.

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