A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF AROMATHERAPY ON THE LEVEL OF ANXIETY AMONG PRIMI MOTHERS IN SELECTED MATERNITY HOSPITALS AT DINDIGUL DISTRICT

BY

301322052

A DISSERTATION SUBMITTED TO THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER – 2015

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OCTOBER – 2015

DECLARATION

I hereby declare that the present dissertation titled **"A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF AROMATHERAPY ON THE LEVEL OF ANXIETY AMONG PRIMI MOTHERS IN SELECTED MATERNITY HOSPITAL AT DINDIGUL DISTRICT",** outcome of the original research work undertaken and carried out be me, under the guidance of Research Guide Prof. Mrs. M. KAVIMANI, R.N, R.M,M.Sc(N),(Phd), Principal, Shivaparvathi Mandradiar Institute of Health Sciences, College of Nursing and the Clinical Speciality Guide Prof. Mrs. D.PREMALATHA, R. N, R. M, M.Sc.N

I also declare that the material of this has not found in any way, the basis for the award of any degree/ diploma in this University or any other University.

301322052

DECLARATION

I hereby declare that the present dissertation titled **"A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF AROMATHERAPY ON THE LEVEL OF ANXIETY AMONG PRIMI MOTHERS IN SELECTED MATERNITY HOSPITAL AT DINDIGUL DISTRICT"**, is a bonafide work done by the **301322052 at Shivaparvathy Mandradiar Institute of Health Sciences** in partial fulfillment of the university rules and regulations for award of Master of Science in nursing under my guidance and supervision during the October 2015.

Signature of the Guide and Head of the Department

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LIST OF ABBREVIATIONS

ABBREVIATIONS	EXPLANATIONS
SPMIHS	Shiv Parvathi Mandradiar Institute of Health Sciences
Fig, F	Figure, Frequency
H	Hypothesis
M.Sc (N)	Master of Science in Nursing
n	Total Number of Samples
No	Number
%	Percentage
SD	Standard Deviation
MD	Mean Difference
P	Probability
AAS	Antepartum Anxiety Symptoms
ADS	Antepartum depressive Symptoms
STAI	Speilberger's State Trait Anxiety Inventory
EPDS	Edinburgh Postnatal Depression Scale
CI	Class Interval
SPSS	Statistical Package for Social Sciences
ANOVA	Analysis of Variance
HAD	Hospital anxiety and depression scale
HARS	Hamilton Anxiety Rating Scale
SPS	Social provision scale
CAM	Complementary alternative medicine
EEG	Electro Encephalography
WHO	World Health Organization

ABSTRACT

"A Quasi Experimental Study To Assess The Effectiveness Of Aromatherapy On The Level Of Anxiety Among Primi Mothers In A Selected Hospital at Dindigul District" was done by 301322052 as a partial fulfillment of the requirement of the Degree of Master of Science in Nursing at Shiv Parvathi Mandradiar Institute of Health Science, under the Tamil Nadu Dr. M. G. R. Medical University, Chennai, October 2015.

The Objectives of the study were:

- To assess the post test level of anxiety among primi antenatal mothers in experimental and control group.
- To evaluate the effectiveness of aromatherapy in reducing anxiety among primi antenatal mothers in experimental group.
- To find out the association between the post test level of anxiety and the selected demographic variable among primi antenatal mothers in experimental group.

The Research Hypothesis formulated and tested were:

- **H_1**There is a significant difference in the post test level of anxiety among primi mothers in experimental and control group.
- **H_2**. There is a significant difference in the pretest and post test level of anxiety among primi mothers in experimental group

- **H_3.** There is a significant association between the post test level of anxiety and the selected demographic variable among primi mothers in experimental group.

Review of literature was done in the following heading,

- Studies related to anxiety among pregnant mothers
- Studies related to use of lavender oil aromatherapy to reduce on anxiety among pregnant mothers
- Studies related to other therapies on anxiety among pregnant mothers.

The conceptual framework for the present study is formulated by the investigator. The research design used was a experimental study. The data collection tool was validated by a Obstetrician and the four nursing experts. Reliability was established by test – retest method, r = 0.9. The samples for the study were chosen by using purposive sampling technique. Totally 60 samples were selected. Among them 30 participants were placed in a experimental group and 30 were placed in a control group. Data was collected by using Structured Questionnaire and Anxiety scale. Data was collected for a period of One month.

The data collected were edited, tabulated, analyzed and interpreted manually. The obtained mean for anxiety in experimental group was 21.9 (SD=3.3), and in control group was 43.9(SD= 8.5) and the mean difference was MD = 22 and the unpaired‘t’ test value was 7.3($P<0.05$).

The findings of the study revealed that aromatherapy was effective in reducing anxiety among primi mothers. The implications, limitations, recommendations and conclusion were clearly spelt.

CHAPTER I

INTRODUCTION

"Anxiety does not empty tomorrow of its sorrows, but only empties today of its strength."

- Charles Spurgeon

BACKGROUND OF THE STUDY

Pregnancy is one of the most important period in the life of a woman, family and society. Therefore extraordinary attention is given to antenatal care by the health care systems of most countries. The goal of antenatal care is to prevent health problems in both infant and mother and to ensure safe motherhood. Nowadays the goal of antenatal care is becoming complex due to many reasons. Women experience dramatic changes during pregnancy and delivery, making them highly sensitive to emotional stimuli and sometimes accompanied by psychological problems. Maternal psychological state affects the intrauterine environment and has a great impact on fetal growth and health. Thus, pregnant women are more vulnerable to stress compared with non-pregnant women.

In fact, 80% of women in labor have anxiety disorders. According to the control theory, there is a relationship between pain and psychological problems like anxiety. Women with lower levels of anxiety experience less pain during labor. In other words, in the presence of anxiety, severe spasm of the pelvic floor and perinneal muscles cause increased labor pain.

First, some previous studies have suggested that maternal anxiety was related to pregnancy outcomes, high anxiety levels were related to somatic complaints in pregnancy, high risk of premature delivery; lower infant birth weight, cranial perimeter and length of the labor, preeclampsia, prolonged labor and forceps delivery and using anesthesia during the delivery. Then, several studies have reported that fear of childbirth was associated with anxiety in pregnant women and fear of childbirth often lied behind the mothers' request for caesarean section and, if untreated, this can lead to unnecessary caesarean section without medical indication.

According to **Perry & Perry, (2006**) Aromatherapy is considered an ideal way to deal with emotions because the sense of smell is directly linked to the center of emotions and memory in the brain. Essential oils carry deep archetypal messages which work on the physical and spiritual basis of illness to heal body, mind and soul.

Aromatherapy works with the part of the brain called the limbic system. The limbic system is commonly referred to as the "emotional brain" since it influences emotions, the nervous system and hormones. When you inhale essential oil molecules, messages are transmitted to the limbic system which affect heart rate, stress level, blood pressure, breathing, memory, digestion, and the immune system.

There are a wide number of essential oils available, each with its own healing properties. But, throughout history, lavender has been cultivated for its flowers and oils and used both cosmetically and medicinally. A member of the Labiatae family, lavender is primarily used either dried or as an essential oil. Historical use includes documented activity as an antibacterial, antifungal, carminative, sedative, and antidepressant.

Lavandula angustifolia, Mill is the most common species of lavender utilized for health purposes. Lavender is an herb native to the Mediterranean, the Arabian Peninsula, Russia, and Africa. The herb is highly regarded for skin and beauty and is commonly used in fragrances and shampoos to help wash and purify the skin. In fact, the word lavender originally stems from from the Latin word “lavare” which means "to wash". However, there are also many medicinal properties associated with lavender.

Lavender affects human EEG pattern accompanied with its anxiolytic effect. It is reported that inhalation of lavender (diluted to 10% concentration) for 3 minutes increases alpha power of EEG as decreases anxiety and brings the subject to a better mood . Increases in theta (4–8 Hz) and alpha (8–13 Hz) wave activity may cause a range of general relaxation effects and can be induced by chemical and nonchemical techniques. It has been shown that during inhalation with lavender (diluted to 10% concentration) , the power of theta and alpha wave activities were significantly increased in all brain regions. This study found that relaxing effects with increases of alpha wave activities after administering lavender; indicating the EEG evidence of relaxation by lavender aromatherapy. Furthermore, lavender aromatherapy is reported to produces EEG patterns characteristics of subjects’ feeling comfortable

Lavender flower and its extracts have been used, both internally and by olfaction, for centuries as a treatment for anxiety. Modern analytical research has identified the main active constituents of the oil; in vitro and animal studies have begun to elucidate mechanisms of action; and controlled clinical trials in humans now document lavender’s efficacy, safety, and dose.

NEED FOR THE STUDY

Anxiety can interfere with the delivery process during pregnancy has been supported by some certain prospective studies. Consequently, such interference can occur directly through psycho-physiological pathways. Pharmacologically, epinephrine has been associated with enervating uterine contractility, and norepinephrine with intensifying uterine contractility. In Anxiety and Stress, higher catecholamine concentrations may decrease the amplitude and frequency of uterine contractions and thus, increase the labor duration and the likelihood of assisted delivery and even cesarean section. Higher prevalence of respiratory infections and other infections in infants born to anxious women is anticipated since these hormones may hamper fetal immune system development.

Despite **World Health Organization (WHO)** estimates that Anxiety disorders will be the second leading cause of global disease burden by 2020.

Ryding et al found that severe fear of childbirth can also lead to emergency caesarean sections.

Studies have also identified that anxiety and stress have a role in altering the duration of pregnancy & the well being of the fetal brain. One group of researchers, report a study at 32 weeks gestation to see if there was any correlation between anxiety and uterine blood flow. The results showed that, in the high anxiety mothers, there was impaired blood flow through uterine arteries. The reduced uterine blood flow could be a mechanism for lower birth weight, preterm birth and infants with elevated cortical seen in highly anxious women. Another group from Sweden reported less cerebral blood flow in instances of increased maternal anxiety. These findings reveal that antenatal anxiety occur frequently, overlaps with depression and increase the likelihood of postnatal depression.

In a recent study **Chung etal** found high level of anxiety, depression and stress is associated with preterm birth, low birth weight and lower agars scores.

Teixeira et al reported a significant association between maternal anxiety in pregnancy and increased artery resistance index at 28-32 weeks of gestation in a sample of 100 pregnant women who were recruited from parent craft classes. Their finding denoted to one possible mechanism for the association between fetal growth restriction and premature delivery and high maternal anxiety during pregnancy.

Hobel et al studies indicated a self-reported maternal stress at 21 to 20 weeks of gestation due to a rise in corticotrophin-releasing hormone (CRH) level at 28 to 30 weeks of gestation in Los Angeles. CRH level increased in patients who reported a higher level of stress/anxiety or who experienced hassles on the day of the study.

Alipour et al., (2012) investigated prenatal anxiety and fear of childbirth as predictor of postpartum depressive symptoms using STAI and Childbirth Attitudes Questionnaire (CAQ) among 160 third trimester pregnant women found a significant relationship between state and trait anxiety and fear of childbirth, and highlighted that nulliparous women were with higher levels of anxiety in 28th and 38th weeks of gestation.

Mohammad et al., (2011) reported that maternal anxiety and other social variable were associated with 19% of antenatal depression.

Emmanuel and John, (2010) recognized that new mothers are at increased risk of getting affected by acute anxiety disorders

According to **Alipour et al., (2012)** in a study among 660 low risk Turkish pregnant women at 28 to 40 weeks gestational ages a significant relationship was determined between fear of childbirth with general anxiety. They highlighted nulliparous women reported higher scores of fear of childbirth than parous women...

Field et al. (2010) reported on the co-morbidity of depression and anxiety in ante partum women.

D Grant et al., (2008) conducted a prospective study among 161 pregnant women reported that the occurrence of gestational complication during pregnancy was related with pregnancy- related stress in third trimester and was found more among young mothers.

In Spain an observational, analytical cross-sectional study among 174 third trimester pregnant women classified as low, medium and high-risk/very high-risk and concluded that pregnant women's anxiety levels were higher than general population and is increased according to pregnancy risk. .

Pollard,(2008) reported that lavender oil is effective in dealing with Anxiety, grief, low self-esteem, improving mental alertness and energy

According to **Faisal-Cury and Rossi Menezes, (2007)** high prevalence of antenatal anxiety both state and trait anxiety was reported in a sample of 453 pregnant women in Osasco, Sao Paulo.

Eriksson et al.,(2006) found that 20% of low-risk pregnancies in western countries reported intense childbirth fear and 6 % to 10 % are seriously incapacitated by childbirth

According to **Bodeker, etal. (2005),** aromatherapy was administered to reduce fear, anxiety and alleviate pain.

Heron et al.(2004) showed that 64% of women who reported elevated levels of anxiety symptoms in pregnancy also reported elevated levels of anxiety postpartum.

Since women and children are more sensitive to psychological tensions, awareness about tension and its consequences is an important aspect of modern medical practice.

Health care providers in general and midwives in specific need to justify their use of complementary therapies using the available evidence. This evidence should address issues of effectiveness and harm. While randomized controlled trials provided that the most reliable form of evidence of effectiveness, further researches are needed to understand patient experience of therapies. In order to achieve this purpose, the present study conducted to determine the feasibility of using lavender oils inhalation as a care option that may reduce anxiety in the third trimester of pregnancy.

Nurses remain in direct and continuous contact with the mothers during pregnancy, and hence play a vital role in management of anxiety. Understanding the nature and effects of anxiety during the labour process, nurses provide supportive care for physical comfort. Non-pharmacologic approach may hold good for the management of anxiety during labour when compared to pharmacologic approach due to the adverse effects of medications

Research has revealed that the essential oil of lavender may be useful for treating anxiety, insomnia, depression, and restlessness. Some studies even suggest that lavender can help digestive issues such as vomiting, nausea,

intestinal gas, upset stomach, and abdominal swelling. In addition to helping with digestive issues, lavender is used to help relieve pain from headaches, sprains, toothaches, and sores. It is also used to prevent hair loss and repel insects.

STATEMENT OF THE PROBLEM

A quasi experimental study to assess the effectiveness of Aromatherapy on the level of anxiety among primi antenatal mothers in selected maternity hospital, Palani,Dindigul district.

OBJECTIVES OF THE STUDY

- To assess the pre and post test level of anxiety among primi antenatal mothers in experimental and control group.
- To evaluate the effectiveness of aromatherapy on the level of anxiety among primi antenatal mothers in experimental group.
- To find out the association between the post test level of anxiety and the selected demographic variable among primi antenatal mothers in experimental group.

HYPOTHESIS

- **H_1**.There is a significant difference in the post test level of anxiety among primi mothers in experimental and control group.

- **H_2**. There is a significant difference in the pretest and post test level of anxiety among primi mothers in experimental group

- **H_3.** There is a significant association between the post test level of anxiety and the selected demographic variable among primi mothers in experimental group.

OPERATIONAL DEFINITION

ANXIETY

It refers to an emotional state that is experienced by primi antenatal mothers towards the progress of pregnancy caused because of altered self image, fear about foetal outcome, labour process and impending parenthood measured by standardised anxiety scale.

EFFECTIVENESS

It refers to the extent to which degree of aromatherapy has achieved the desired effect in reducing the anxiety among primi antenatal mothers as measured by the anxiety scale.

AROMATHERAPY

It refers to the inhalation (distance from nose) of lavender oil 1-2 drops applied to a sterile gauze piece, inhaled for a period of 5 minutes, in the morning and evening (10am and 4pm).

PRIMI ANTENATAL MOTHERS

It refers to the women who is experiencing pregnancy for the first time and who has crossed 32 weeks of gestation.

MATERNITY HOSPITAL

It refers to the hospital providing care for pregnant women, newborn infants and having the facilities for childbirth.

ASSUMPTIONS

- Every primi antenatal mother is unique and everyone respond in a unique way to anxiety.
- Every primi antenatal mother has her own perceptions of pregnancy.
- Ante partum anxiety may lead to postpartum depression, lower birth weight, and premature delivery and have a negative impact on child development.
- Lavender oil Aromatherapy is an effective in the management of anxiety among primi antenatal mothers.

DELIMITATION

- Study is delimited to all the primi antenatal mothers who are coming to the selected maternity hospital.
- Study is delimited to all the primi antenatal mothers who has crossed 32 weeks of gestation.

CONCEPTUAL FRAMEWORK

A concept is an abstract idea or normal image of phenomena or reality. Conceptualization is a process of forming idea which utilized and forms conceptual frame work for development research design.

Conceptual framework used for the present study is based on Nursing Process model. It consists of five steps i.e. Assessment, Nursing diagnosis, Goal, Planning, Implementation, Evaluation.

ASSESSMENT

It is defined as the act of judging or deciding the amount, value, quality, or importance of something. In this study it refers to the assessment of participant's demographic variables.

NURSING DIAGNOSIS

It is defined as a statement of a health problem or of a potential problem in the client's health status that a nurse is licensed and competent to treat. In this study it refers to Patient's Anxiety related to altered body image, fear of childbirth, fear of parenthood, etc.

GOAL

It is defined as an observable and measurable end result having one or more objectives to be achieved within a more or less fixed timeframe. Here the objective is to reduce anxiety by means of lavender oil aromatherapy.

PLANNING

It is the process of thinking about and organizing the activities required to achieve a desired goal. In this study the investigator planned to administer lavender oil aromatherapy to reduce anxiety in the experimental group and planned to withhold the lavender oil aromatherapy in the control group.

IMPLEMENTATION

It is defined as the execution of any idea for the benefits of the clients in the health care delivery system. In this study it refers to the administration of lavender oil aromatherapy to primi mothers in order to get relieved from anxiety.

EVALUATION

It is to judge or calculate the quality, importance, amount or value of something. In this study it refers to the post test assessment of anxiety after administering lavender oil aromatherapy.

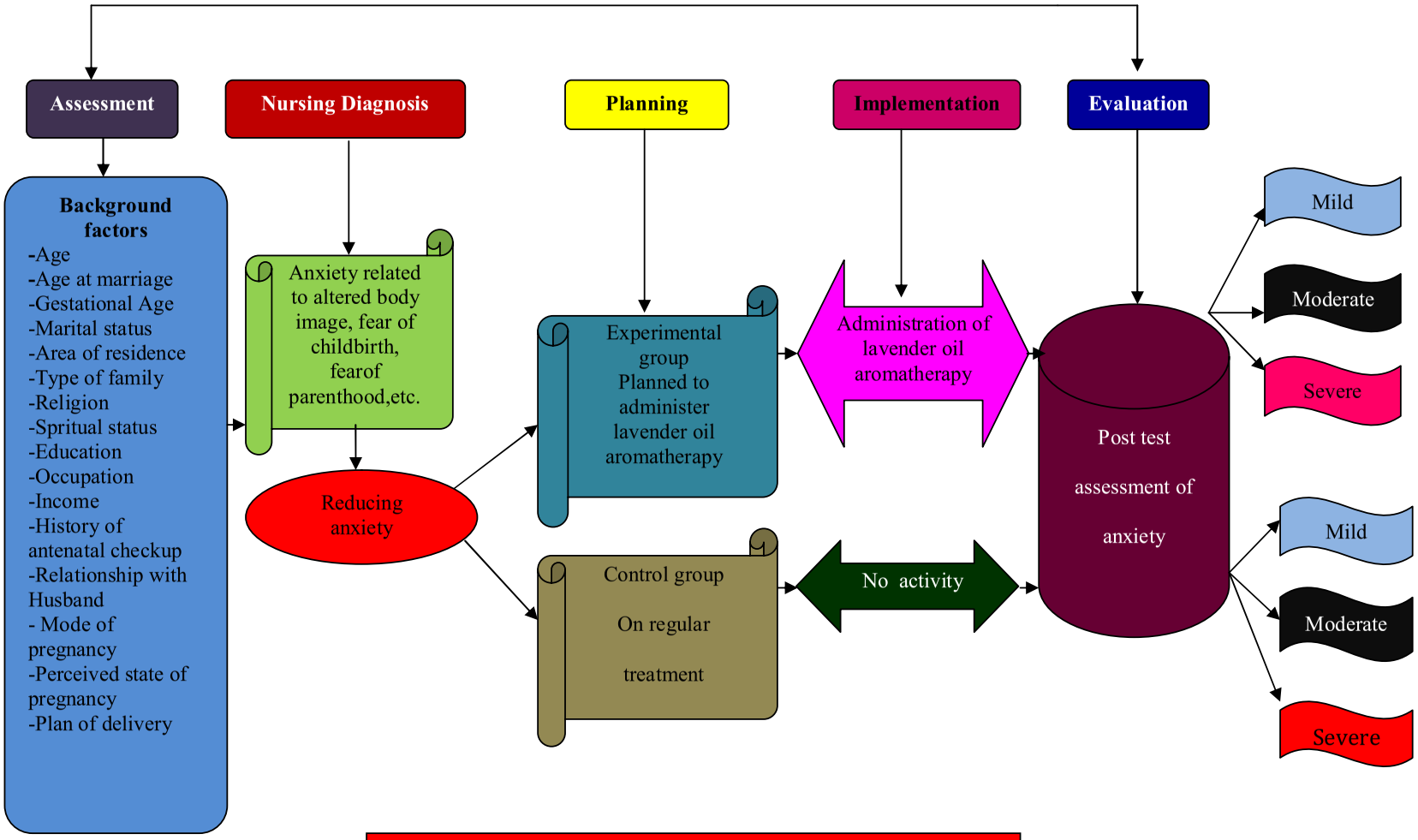

Fig 1 : Conceptual framework based on Nursing Process Model

CHAPTER II

REVIEW OF LITERATURE

Review of literature is a key step in research process. It refers to an extensive, exhaustive and systematic examination of publications relevant to the required research project. Before any research can be started, whether it is a single study or an extended project, a literature review of previous studies and experiences related to the proposed investigation should be done. It helps to contribute new knowledge, insight and general scholarship of the researchers. The relevant literature searched and organized as follows

I. Study related to anxiety among pregnant mothers.

II. Study related to use of lavender oil aromatherapy to reduce anxiety among pregnant mothers.

III. Study related to effectiveness of other therapies on anxiety among pregnant mothers.

I.STUDY RELATED TO ANXIETY AMONG PREGNANT MOTHERS

Ahmad vaqas etal (2014) conducted a cross sectional study in four teaching hospitals in Lahore from February, 2014 to June, 2014. 500 Pregnant women presenting at the outdoors of obstetrics and gynecology department were purposively selected and interviewed. The questionnaire was used as a tool comprised of Demographics, Hospital anxiety scale. Data was analyzed in

SPSS version20. Pearson Chi Square, Bivariate Correlations and Partial Correlations were run to analyze associations of independent variables with scores on HAD scale and SPS. This study showed a high prevalence of antenatal anxiety (49%),and there was a very significant and strong negative correlation between social support and anxiety ($r = -.433$, $p < .001$) and social support . Point biserial correlation revealed that occupation of pregnant women significantly correlated with anxiety rpb=.17 and depression = .16 (all ps< .001). The study concluded that employed women reported higher levels of anxiety. They suggested that interventions designed to reduce antenatal anxiety.

Shilpa kumari etal (2014) conducted a descriptive study to analyse the effect of anxiety on pregnancy outcome. Two hundred pregnant women aged between 20-30 years attending Obstetrics and Gynecological Institute of medical sciences, Banaras Hindu University, Varanasi were selected by purposive sampling technique. Structured questionnaire for baseline information, Radloff's epidemiological studies scale and state, Trait and free floating anxiety inventory by Rastogi and Tripathi were used to collect the data. Data was analysed with correlation and hierarchial regression. The study concluded that women experiencing higher level of anxiety were more likely to deliver an infant with less gestational age and low birth weight.

Suneth Buddhika Agampodi etal (2013) conducted a non experimental descriptive study to determine the prevalence of antenatal anxiety and correlates of antenatal anxiety among pregnant women in Anuradhapura, Sri Lanka. A total of 376 Pregnant women with gestational age 24-36 weeks were selected by using a two stage cluster sampling. Questionnaires were administered to collect the data. Mean, Standard deviation, Chi square test were used to analyze the data. Prevalence of Antenatal anxiety in this study sample was 16.2% and none of the socio demographic factors were associated with anxiety in this samples. The study concluded that prevalence of anxiety regarding pregnancy was relatively low in srilanakan mothers.

Hashima E Nasreen etal (2011) conducted prospective cohort study to assess the prevalence and associated factors of depressive and anxiety symptoms during pregnancy in Bangaladesh. Samples were selected from the pregnancy registration maintained by the Bangaldesh Rural Advancement Committee.720 women in the third trimester were selected by convenient sampling technique. The Edinburgh Postnatal Depression Scale which had been validated for detection of anxiety in antepartum was used to assess anxiety symptoms. Anxiety was assessed using the trait anxiety scale of the State Trait Anxiety Inventory. Mean, Standard deviation, Independent t test, Bi variate analysis (Fishers's Exact two sided p test were used to analyse the data. Of the 720 participants assessed at the third trimester of pregnancy, 132 had EPDS scores ≥10, indicating an ADS point prevalence of 18.3% ($CI_{95\%}$ 15.9%-20.7%), mean score 12.3 (SD 2.8). Similarly, the point prevalence of AAS (STAI ≥45) was 29.4% ($CI_{95\%}$ 26.1%-32.7%), mean score 49.6 (SD 4.6). Twenty-three women (3.4%) had both ADS and AAS. The study concluded that anxiety are common during pregnancy and that illiteracy, intimate partner violence, bad relationships with husbands, a lack of practical support and previous anxiety symptoms are independent factors associated with ADS and AAS.

Emre Yanikkerem etal (2011) conducted a cross sectional study to assess the prevalence and associated risk factors for antenatal anxiety among 651 pregnant women at the maternal and child out patient department of Merkex Efendi Hospital, in Manisa, Turkey. Purposive sampling technique was used to select the samples. Structured questionnaire for demographic data and Pregnancy related physical symptoms questionnaire were used to collect the data by interview method. SPSS version 11.5, Chi square test and Fisher test, Univariate analysis were used to analyse the data. Anxiety symptoms were found in the women 27(21.4%), 33(9.1%), 11(6.7%) respectively for the women with no formal education, primary education and high school

education. Women who were disastisfied with their marriage and women with unplanned and unwanted pregnancy had significantly higher rate of anxiety symptoms. The study concluded that open discussion about anxiety during pregnancy may help to encourage women to seek help.

Priscial Krauss Pereire etal (2011) conducted a cross sectional study to find out the risk factors of anxiety among pregnant women attending a public health clinic in Rio de janeiro, Brazil. The sample size was 331 and selected by consecutive sampling technique. Participants were interviewed about their socio demographic status, obstetric/medical conditions, life events and violence during pregnancy. Anxiety symptoms were assessed by using the trait anxiety scale of the State Trait Anxiety Inventory. Mean, Standard deviation, Independent t test, Bi variate analysis (Fishers's Exact two sided p test were used to analyse the data. The prevalence of anxiety during pregnancy was 14.4% and associated factors include unplanned pregnancy, serious physical illness and casual jobs. The study concluded that anxiety among antenatal mothers in Brazil appears to be lower than in most developing countries.

Zahra Alipour etal (2011) conducted a prospective analytical design to assess the Pregnant women with gestational age of 28-30 weeks were chosen with simple random sampling method. Data were collected by using self-administered questionnaires which included Spielberger's state-trait anxiety and Hartman's questionnaire of attitudes of childbirth. Statistical analysis was conducted using SPSS version 16. Independent t-test, Pearson correlation coefficients. Mean scores of fear of childbirth in anxious women were significantly more than non-anxious women with state anxiety and trait anxiety at gestational age of week 28th ($p < 0.01$) and ($p < 0.001$) respectively. In addition, mean scores of fear of childbirth in anxious women were significantly more than non-anxious women with state anxiety and trait anxiety at

gestational age of week 38th ($p < 0.01$) and ($p < 0.001$) respectively. The study concluded that, anxiety was significantly associated with fear of childbirth among nulliparous women. The study recommended that midwives should be trained to reduce unwanted side effects of anxiety and fear of childbirth.

Misri S etal (2010) conducted a longitudinal prospective study to analyse the effect of antenatal anxiety on postpartum parenting stress. 94 pregnant women were monitored for depression and anxiety during the third trimester using the Hamilton Depression Rating Scale and Hamilton Anxiety Rating Scale. Parenting stress was assessed using the Parenting Stress Index Short form at 3 and 6 months postpartum. Descriptive and Inferential statistics were used to analyse the data. The study indicated that antenatal third trimester depression and anxiety were significant predictors of 3- and 6-month postpartum parenting stress. Twenty of 41 mothers on Antenatal depression and anxiety achieved remission (HDRS = 7) in pregnancy and had average parenting stress scores of about 1 standard deviation lower than those who did not at 3- and 6-months postpartum ($t = 3.32$, $df = 32$, $P = 0.002$ and $t = 2.52$, $df = 32$, $P = 0.02$, respectively). The study concluded that antenatal depression and anxiety directly impact postpartum parenting stress, regardless of antenatal depression treatment.

Nasiri Amiri etal (2010) conducted a prospective cohort study to determine the effect of prenatal anxiety on spontaneous preterm delivery and low birth weight (LBW) in Babol, Northern Iran. 682 women with singleton pregnancies who were consecutively recruited between 20 and 28 weeks of gestation in Babol Health Care centers for prenatal care were enrolled. The gestational age was based on last menstrual period or ultrasound examination in first half of pregnancy. Anxiety was assessed using self-administered questionnaires including the Spielberger State-Trait Anxiety Inventory. All analyses were performed using SPSS software version 14 using Chi-Square and

T tests and a logistic regression. Findings revealed that high score state anxiety (≥45) was associated with an increased preterm delivery (RR=3.1, 95% CI: 2.05-4.7) and LBW (RR=2.6, CI %95: 1.6-4.2). The study concluded that pregnant women with high score anxiety demonstrated increase preterm delivery and LBW rates and there was a significant association between both state and trait anxiety, preterm delivery and LBW.

I.Jeyanthi etal (2008) performed a descriptive comparative study to find out the level of anxiety and stress among the primigravida and Multigravida Respondents. 60 pregnant women attending the out patient department of Child Jesus Hospital, Trichy was selected by simple random sampling method. Data was collected by interview method by using structured questionnaire for baseline information including Taylor's anxiety scale and Dr.Latha Sathish's stress scale. Descriptive and Inferential statisitics were used to analyse the data. The mean score for anxiety level in primigravida and multigravids are 20.167 and 24.093 respectively, $t=2.23$ ($p<0.05$) for anxiety level and $t=1.49$($p>0.05$) for stress level. The findings reveled that all the pregnant women experiencing anxiety. There is no significant relationship between primigravida and multigravida with regard to stress level. They suggested that the level of anxiety can be reduced largely with help of the family members who can help to lesser the burden during pregnancy.

Fareeha Hamid etal (2008) conducted a cross sectional study to detect the prevalence of anxiety and depression in pregnant women in order to grasp the attention of health care system by monitoring such psychological issues and to help them to deal with the burden of anxiety and depression in Fatima Memorial Hospital, Lahore. One hundred samples were selected by convenient sampling technique. The data was collected by using Hospital Anxiety and depression scale. Mean, Standard deviation, t test were used to analyse the data. The study revealed that of one hundred pregnant women 39% & 18% scored

above cut-off on anxiety and depression scale respectively. The study concluded that high prevalence of anxiety and depression symptoms during pregnancy indicate that women in childbearing years could be vulnerable to anxiety and depressive disorder.

Girija etal (2005) conducted a prospective cohort study to determine the prevalence of pregnancy specific anxiety across the three trimesters of pregnancy and postnatal period and to relate anxiety with labour outcomes in Government Victorial hospital, Kollam kerala. 500 low risk nulliparous pregnancy women of 18-35 years were selected by purposive sampling technique. Anxiety was measured using State Train Anxiety Inventory scale and pregnancy specific anxiety inventory and labour outcomes noted. SPSS version 16 was used to analyse the data. The mean anxiety score during third trimester was high (106.89) compared to first, second trimesters and postnatal. The findings indicated that pregnancy anxiety is a core predictor of many adverse labour outcomes. They recommended a routine screening of pregnancy anxiety needs to be integrated into prenatal care.

II.STUDIES RELATED TO EFFECTIVENESS OF LAVENDER OIL AROMATHERAPY ON ANXIETY AMONG PREGNANT MOTHERS

Toshiko lgarashi etal(2013):conducted a randomized control trail tyo clarify the physical and psychological effects of inhalation aromatherapy on pregnant women. This trail was performed at gynecology outpatient department in hospital in Kyoto,Japan. The study included 30 pregnant women in 28weeks of a single pregnancy with the normal course. Participants were randomly assigned into an aromatherapy and a control group. They were seated in resting position for 10 minutes. During the later 5minutes of each 10 minutes session,

aromatherapy inhalation was performed for the aromatherapy group. For intra group comparison of the POMS,LF and HF/LF were analyzed using the Wilcoxon singed-rank test. For intra group comparison the Mann-Whitney U test was performed to compare both groups at each measurement point. Statistical processing was performed using JMP 7.0.1 produced by SAS Institute Inc. The results of the POMS were such that based on an intra group comparison .Significant difference were observed in the Tension – Anxiety – score ($p<0.05$) and the Anger Hostility score ($p<0.05$) and the respective improvements observed were due to aromatherapy. The study concluded that based on a comparison between the groups no substantial difference was observed .Hence further study in necessary in the future.

Yuvansun etal (2009) conducted a experimental study in South Korea to identify the effects of aromatherapy massage on the anxiety and self-esteem experienced by Korean pregnant women. The subjects comprised 36 pregnant women: 16 in the experimental group and 20 in the control group. Purposive sampling technique was used to select the samples. Aromatherapy massage using lavender, chamomile, rosemary, and lemon was given to the experimental group only. Each massage session lasted 20 min, and was performed 3 times per week for two 3-week periods with an intervening 1-week break. Data were edited, tabulated, analysed by using SPSS version 15. The results showed that the intervention produced significant association in the anxiety and self-esteem and no significant association in blood pressure or pulse rate between the two groups. The study concluded that aromatherapy massage exerts positive effects on anxiety and self-esteem. However, more objective, clinical measures should be applied in a future study with a randomized placebo-controlled design.

III.STUDY RELATED TO EFFECTIVENESS OF OTHER THERAPIES ON ANXIETY AMONG PREGNANT MOTHERS

Shivanpillai kalaivani (2014) performed a Quasi experimental Non-equivalent control group pretest posttest design among 60 prim ipara mothers coming to community centres of Madurai city, Tamil Nadu. To evaluate the effectiveness of music therapy on stress among pregnant mothers. Convenient sampling technique was used to select the samples. Music therapy was administered via walkman to each individual mother for 40 minutes session for 6 days. Perceived Stress Scale tool was used to assess the level of stress status of pregnant mothers. The data was collected, organized and analyzed in terms of both descriptive and inferential statistics. The major findings of the study were, the mean posttest stress score of experimental group was significantly (t-6.19, $p<0.05$) lower than the control group. The mean posttest stress score of experimental group was significantly (t-10.48, $p<0.05$) lower than the mean pretest stress score. There was no significant association between the posttest stress score and demographic variable of pregnant mothers. The study suggested that music therapy is a cost – effective, enjoyable, non – invasive therapy and could be useful in creating an environment that is conductive to the well – being of the pregnant women.

Debajani Nayak etal (2014) performed a quasi experimental research with one group pre test and post test design to assess the level of anxiety and pain perception in primipara mothers during the first stage of labour after receiving music therapy in the selected hospitals of Odisha, India. The sample comprised of 30 primipara mothers was purposively selected. Structured interview schedule and Speilberger's State Trait Anxiety Inventory scale, Numerical pain intensity scale. was used to collect the data. Mean post-test (50.06) and pre-test (59.23) anxiety scores differed significantly from each other in the experimental group. The study concluded that music therapy would be very helpful in alleviating anxiety level and pain perception in primimothers during first stage of labor.

Leodoro Labrague etal (2013) undertook a quasi experimental design to identify the effect of soothing music on the perception of anxiety during the latent phase of labor among laboring women in a government hospital, Phillipines. Fifty subjects were randomly selected and were equally assigned into either music or non music group. The nonmusical group was provided with the usual standard routine with the usual standard routine care while the music group was provided with the usual routine of care and was exposed music therapy for 30 minutes. Participant's level of anxiety was measured by STAI. Descriptive and Inferential statistics were used to analyse the data. The mean score of anxiety in the experimental group was less M=3.5 when compared to the mean score of anxiety in the control group M=8.5. The study revealed than those in the music group had significantly reduction in anxiety level compared to those in non music group. The study concluded that soothing music during the latent phase of labor relievesd anxiety and can be used as part their routine when providing care for women during this stage.

Mona Kalajzadek etal (2012) undertook a randomized group design to assess the effect of selected yoga exercises on anxiety in pregnant women in the second and third trimester. 24 healthy, nonathlete, and volunteer pregnant women in the second and third trimester of pregnancy were divided into experimental and control group. The anxiety level was assessed by Pregnancy Outcome Questionnaire in pregnancy. The experimental group performed the selected yoga exercises for 8weeks. Data was analysed by ANOVA with repeated measures of test factor indicated the significant main effect of test and interaction of test and group $p<0.001$). Kolmogorov-Smirnov (K-S) test, t tests with a Bonferroni correction were also used to analyze the data. The study concluded that yoga exercises regardless of trimesters of pregnancy had a positive impact on women's anxiety.

Chang MY etal (2010) conducted a randomized controlled trial to investigate the effects of music on pain reaction and anxiety during labor. Sixty primi mothers expected to have a normal spontaneous delivery were randomly assigned to experimental and control group. Self reported visual analogue scale for pain and nurse rated present behavioral intensity were used to measure labor pain. Anxiety was measured with a visual analogue scale for anxiety and finger temperature. Pain and anxiety between groups were compared during the latent phase (2-4 cm cervical dilation) and active phase (5-7 cm) separately. The study revealed that revealed that compared with the control group, the experimental group had significantly lower pain, anxiety and a higher finger temperature during the latent phase of labour. However, no significant differences were found between the two groups on all outcome measures during the active phase. The study supported that music listening is an acceptable and non-medical coping strategy for labouring women.

CHAPTER III

RESEARCH METHODOLOGY

Methodology is a significant part of any research which enables the researcher to organize the procedure of collecting reliable data for the problem under study or investigation. This chapter deals with the description of methodology and the various steps adopted to collect and organize data for the study.

According to **Polit and Beck (2004**) research methods are the techniques used by the researcher to structure a study to gather and analyze information relevant to research question.

The methodology section includes the research approach, research design, variables, settings, population, sample, sample size, sampling technique, sampling criteria, development of the tool, description of the tool, validity, reliability, pilot study, data collection procedure, plan for analysis and ethical consideration.

RESEARCH APPROACH

According to **Suresh K. Sharma (2011**) the research approach involves the description of the plan to investigate the phenomenon under study in a quantitative, qualitative or a combination of the two methods. Furthermore, it helps to decide whether the presence or absence as well as manipulation and control over variables.

The present study was quantitative and evaluative in nature. The ultimate aim of the present study is to assess the effectiveness of Lavender Oil Aromatherapy in reducing anxiety among primi mothers in a selected maternity hospital at Sankararaman Nursing home, and Saikrishna women's center, Dindigul District.

RESEARCH DESIGN

According to **Kothari,** a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

The research design selected for this study was quasi experimental research design. In this present study, the investigator intended to assess the effectiveness of Lavender oil aromatherapy in reducing anxiety among primi antenatal mothers got admitted in a selected maternity hospital, Dindigul district.

SCHEMATIC PRESENTATION OF RESEARCH DESIGN

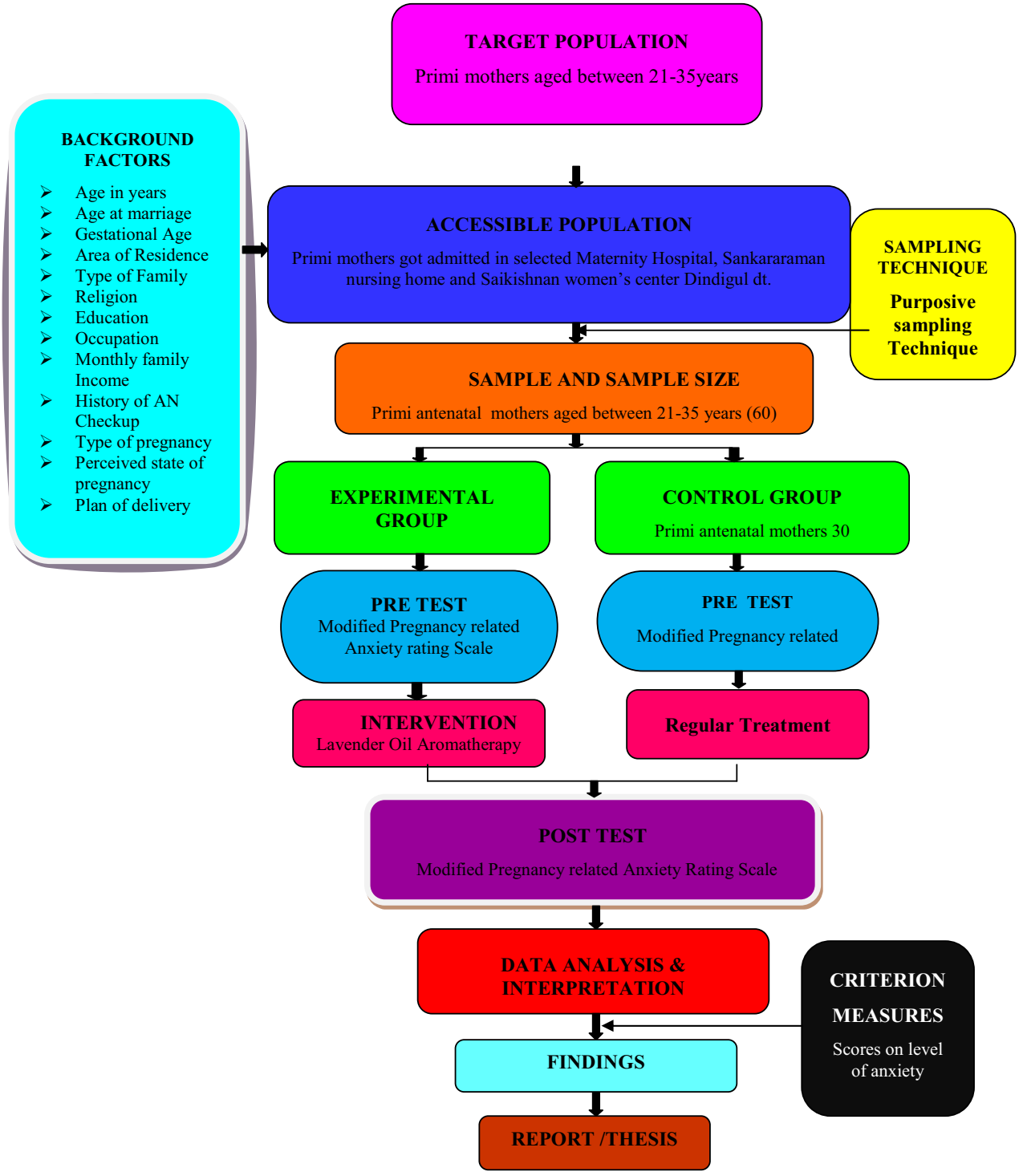

Fig 2: Schematic presentation of research design

RESEARCH DESIGN NOTATION

GROUP	PRE TEST (DAY- 1)	INTERVENTION (DAY-2)	POST TEST (DAY-3)
Experimental group	O_1	$X_1, X_2, X_3, X_4, X_5, X_6$	O_2
Control group	O_1	-	O_2

O_1 - Pre intervention anxiety level on 1st day in the experimental group

O_1 - Pre intervention anxiety level on 1st day in the control group

X_1 - First intervention day in the morning

X_2 - First intervention day in the evening

X_3 - Second intervention day in the morning

X_4 - Second intervention day in the morning

X_5 - Third intervention day in the morning

X_6 - Third intervention day in the morning

O_2 - Post intervention anxiety level on 3 rd day in the experimental group

O_2 - Post intervention anxiety level on 3 rd day in the control group

VARIABLES

Variables are qualities, properties or characteristics of person, things, or situations that change or vary.

Chinn and Kramer stated that *"*Variables are concepts at different level of abstracts that are concisely defined to promote their measurement or manipulation within study".

The variables mainly included in this study were dependant variable and independent variable. Dependent variables explain the effect of independent variable.

DEPENDENT VARIABLE

The dependant variable is the variable that the researcher is interested in understanding, explaining and predicting. It is free to change over a range of different experimental treatments. The dependent variable is what we measure in the experiment and what is affected during the experiment. It depends on the independent variable.

Dependent variable – Level of anxiety

INDEPENDENT VARIABLE

The independent variable is assumed to cause or influence the dependent variable or outcome. The independent variable is manipulated in experimental research to observe its effect on the dependent variable. It is sometimes referred to as the treatment variable.

Independent variable – Lavender oil aromatherapy

DEMOGRAPHIC VARIABLES

Demographic variables are the characteristics and attributes of the study subjects. It is used for the researcher to study the sample characteristics and to present them in research findings. Demographic variables included in this study were Age in years, , Age at marriage, Gestational age, Area of residence, Type of family, Religion, Education, Occupation, Monthly Family Income, History of antenatal checkup, Type of Pregnancy, Perceived state of pregnancy, Plan of delivery.

RESEARCH SETTING

According to **Polit and Hungler (2010)** the selection of setting was done on the basis of feasibility of conducting the study, availability of subjects and co-operation of the authorities, feasibility of time, money and the material.

For this study two maternity hospitals was selected based on the availability of samples, acquaintance of the investigator with the area and the cooperation from the institution. The selected hospital was Sankararaman nursing home ,and Saikrishna women's center, Dindigul district.

POPULATION

The term population refers to the aggregate or totality of all subjects or numbers that confirm to a set of specification.

TARGET POPULATION

It refers to the population under study and the population to which the researcher wants to generalize the research findings. The target population of this study was primi antenatal mothers who had crossed 32weeks of gestation.

ACCESSIBLE POPULATION

It refers to the part of the population that is available to the research. The accessible population in the study was primi mothers crossed 32 weeks of gestation, admitted for observation in a selected maternity hospital, Sankararaman nursing home and Saikrishna women's center, Dindigul district.

SAMPLE AND SAMPLE SIZE

Sample is a subset of the unit that comprises the population. Sample of the study consisted of 60 primi mothers who had crossed 32 weeks of gestation, admitted in the selected setting.

Sample size is the number of elements of the population. The main purpose of the researcher is to obtain a sample enough to show significance yet to be expedient and economical at the same time. Sample size is determined by the type of study, nature of variables, level of significance, required type of data, feasibility to conduct the study and availability of the samples.

In this study, the samples were selected by purposive sampling technique. Selected samples were the primi mothers aged between 21-35 years, crossed 32 weeks of gestation, who got admitted in selected maternity hospitals, Sankararaman Nursing home ,and Saikrishna women's center, Dindigul district. The sample size was 60 for the present study. Among 60, 30 were placed in experimental group and 30 were placed in control group.

SAMPLING TECHNIQUE

Sampling is an important step in the research process. It refers to the process of selecting the portion of the population to represent the entire population.

In this study purposive sampling technique was adopted. It is one of the non probability or non random method in which the deliberate selection of sample units that confirm to some pre determined criteria.

SAMPLING CRITERIA

INCLUSION CRITERIA

- Primi antenatal mothers aged between 21-35 years.
- Primi antenatal mothers who willing to participate in the study.
- Primi antenatal mothers who can communicate in Tamil and English.
- Primi antenatal mothers with single pregnancy and fetus in cephalic presentation.
- Primi antenatal mothers who are free from medical and obstetric complications.

EXCLUSION CRITERIA

- Primi antenatal mothers who was not willing to participate.
- Primi antenatal mothers who has respiratory problems
- Primi antenatal mothers suffering from psychiatric illness and allergies.
- Primi antenatal mothers with sensory impairment.
- Primi antenatal mothers with any major medical or obstetric complications like narrow pelvis, gestational diabetes, endocrinal disease, hypertension, cardio vascular disease, etc.

DEVELOPMENT OF THE TOOL

The instrument selected in a research should be as far as possible the vehicle that would best obtains data for drawing pertinent to the study and add to the body of knowledge in the discipline. The tool is a written device that a researcher uses to collect the data. After careful and detailed review of literature, extensive library research, internet sources and consultation with experts the investigator prepared and developed a structured questionnaire for collecting baseline information of the participants. Pregnancy Specific Anxiety was assessed with Pregnancy Related Anxiety Questionnaire.

DESCRIPTION OF THE TOOL

PART I: BACKGROUND FACTORS

This section consists of self structured questionnaire about the demographic details of the primi mothers. It collects the information regarding Age, Gestational age in years, Age at marriage, Area of residence, Type of family, Religion, Education, Occupation, Income, History of antenatal checkup, Type of Pregnancy, Perceived state of pregnancy, Plan of delivery.

PART II: MODIFIED PREGNANCY RELATED ANXIETY SCALE

Pregnancy specific Anxiety was assessed with modified Pregnancy Related Anxiety Scale. The items of the Pregnancy Related Anxiety scale consists of 4 items regarding Fear about the personal appearance, 2 items regarding Fear about developing medical problems during pregnancy, 6 items regarding Fear about delivery, 6 items regarding Fear about the baby, 1 item regarding fear about parenthood, 1 item regarding Fear about economical expenses and the scores on each item ranged from 1-4. The scores were distributed for the answers in the following manner i.e. Never – 1, Sometimes - 2, Most of the time – 3, Almost all the time – 4.

SCORING

SCORE	LEVEL OF ANXIETY
0-26	Mild
27-53	Moderate
54-80	Severe

VALIDITY OF THE TOOL

According to **Treece and Treece** Validity refers to an instrument or test actually testing what it suppose to be testing.

The investigator used Structured Questionnaire to collect the information's regarding background factors of primi mothers participated in the study and the modified pregnancy related anxiety assessment scale was used to measure the level of anxiety. Four nursing experts and Obstetrician were requested to check for relevance, sequence and clarity of the tool. After getting the opinion of the expert some modifications and rearrangements of few items done in the structured questionnaire regarding demographic variable and slight modifications done in the phrases of the statement of the modified pregnancy related anxiety scale and some of the items were changed and rearranged.

RELIABILITY OF THE TOOL

Reliability of the instrument is the degree of consistency with which it measures attribute it is support to measure, it refers to the extent to which the same results are obtained on repeated administration of the instrument. The reliability of a measuring tool can be assessed in the aspects of stability, internal consistency, and equivalence depending on the nature of the instrument and aspects of the reliability concept.

The reliability of the instrument was estimated by Karl Pearson correlation coefficient. The reliability value of the instrument was r=0.9 and it was found to be statistically reliable for the main study.

PILOT STUDY

The pilot study is miniature trial run of the methodology planned for the majority research study, which facilitates to improve the methodology of the study, can assess the feasibility of the study and may identify the problems that may be faced by the researcher in actual larger project.

After obtaining permission from the hospital authorities, a pilot study was conducted in Bakyalakshmi hospital, Dindigul district among 10 primi mothers who fulfilled the criteria for sample in the month of May 2015. Among them 5 was placed in experimental group and 5 was placed in control group. Consent was obtained from the samples and Confidentiality was ensured. The duration of the study was one week. These samples were not included in the main study. Pilot study helped the investigator to ascertain the feasibility and practicability of the designed methodology. These samples were not included in the study.

DATA COLLECTION PROCEDURE

PHASE I : SCREENING PHASE

The study was conducted in a selected maternity hospital at Dindigul district namely Sankararaman Nursing home,and Saikrishna women's center. Data was collected for 4 weeks in the month of June 2015, prior permission was obtained from the authorities.

Screening was done with the help of the staff nurse and auxiliary nurse midwives. Medical and obstetrical history was collected to select the samples. Primi mothers with medical and obstetrical complications, primi mothers with

sensory impairment, primi mothers allergic to lavender oil, primi mothers below 21 and above 35 years of age excluded from the study. Total of 100 samples 60 samples fulfilled the selection criteria and were selected by purposive sampling in which 30 were placed in experimental group and 30 were placed in control group.

PHASE II: DATA COLLECTION AND IMPLEMENTATION PHASE

After identifying the samples, the purpose and procedure of data collection was explained to the samples and written consent was obtained from them. Confidentiality was ensured. On the First day the investigator collected the information's by using structured interview schedule regarding the demographic profiles. Anxiety level of the samples in the experimental and control group were assessed by using Modified Pregnancy Related Anxiety Rating Scale. Then the investigator made the samples in the experimental group to sit in a comfortable position and gave a sterile gauze piece contains 2-3 drops of lavender oil to inhale. The samples were requested to inhale the oil for a period of five minutes. The procedure was continued for three days and on the third day evening level of anxiety was measured by using structured interview schedule with the help of modified pregnancy related anxiety scale in experimental and in control group. To measure the anxiety it takes nearly 10 minutes for each participant.

PHASE III: TERMINATION PHASE

The tool was verified for completion. The investigator shared the word of thanks with each and every one of the participant for their cooperation and willingness to participate in the study. The samples were assured about the confidentiality of the data.

PLAN FOR DATA ANALYSIS

Data analysis is the systematic organization and synthesis of research data and testing of the research hypothesis using the data.

The data collected from the subjects were compiled and analyzed by using descriptive and inferential statistics. The following plan of analysis was developed.

- Distribution of samples according to background factors were explained by using frequency and percentage.

- Data on pre test and post test level of anxiety in experimental and control group

- Mean, Standard Deviation, Mean Difference and‘t’ value was used to compare the post test level of anxiety among primi mothers in experimental and control group.

- Chi square test was used to associate the post test level of anxiety and background factors among primi mothers in experimental group.

ETHICAL CONSIDERATION

For the present study, the investigator took into consideration the ethical values. The study was accepted by the research ethical committee of the college. Prior permission was obtained from authorities of the selected maternity hospital. Purpose of the study was explained to the primi mothers, and the bystanders of primi mothers and the authorities. Informed written

consent was taken and the confidentiality was promised and ensured. The participants were given freedom to quit from the study if they are not willing to participate in the study. No routine duties of the hospital withheld. No invasive procedures were involved in the study. No physical and psychological pain was caused. Thus the ethical issues were ensured in the study.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

Data collection is followed by the analysis and interpretation of data were collected data are analyzed and interpreted in accordance with study objectives. Analysis and interpretation of data includes compilation, editing, coding, classification and presentation of data. The purpose of analyzing the data collected in a study is to describe the data in meaningful terms as the data collected does not answer the research questions or test research hypothesis. The data is used to be systematically analyzed so that trends and patterns of relationships can be detected.

This chapter deals with the analysis and interpretation of the data collected after administration of lavender oil aromatherapy among primi mothers got admitted in Sankararaman Nursing home and Saikrishnan women's center, Palani, Dindigul district. The data collected were edited, tabulated, analyzed and interpreted a finding obtained were presented in the form of tables and diagrams under the following sections.

THE DATA ANALYSIS WERE PRESENTED AS FOLLOWS

Section I : Data on selected background factors of primi antenatal mothers in experimental and Control group

Section II : Data on the pre test and post test level of anxiety among primi antenatal mothers in experimental and control group

Section III : Data on effectiveness of lavender oil aromatherapy

Section IV : Data on association between post test level of anxiety and the selected Demographic variables among primi antenatal mothers in experimental group

SECTION I: DATA ON SELECTED BACKGROUND FACTORS OF PRIMI MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

TABLE – I

FREQUENCY, PERCENTAGE DISTRIBUTION OF BACKGROUND FACTORS OF PRIMI MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

S.No	Demographic Variables	Experimental group		Control group	
		F	%	F	%
1.	**Age in years**				
	a)21-25	20	66.66%	19	63.33%
	b)25-30	7	23.33%	9	10.00%
	c)30-35	2	6.66%	1	3.33%
	d)Above 35 years	1	3.33%	1	3.33%
2.	**Age at marriage**				
	a)21-25	20	66.66%	19	63.33%
	b)25-30	8	26.66%	9	30%
	c)30-35	2	6.66%	1	3.33%
	d)Above 35 years	0	0	1	3.33%

3.	**Gestational Age**				
	a)32-34 weeks	8	26.66%	9	30%
	b)34-37 weeks	7	23.33%	8	26.66%
	c)37-40 weeks	15	50%	13	43.33%
4.	**Area of Residence**				
	a)Urban	8	26.66%	9	30%
	b)Rural	22	73.33%	21	70%
5.	**Type of family**				
	a)Nuclear family	18	60%	16	60%
	b)Joint family	10	33.33%	14	46.66%
	c)Extended family	2	6.66%	0	0
6.	**Religion**				
	a)Hindu	20	66.66%	22	73.33%
	b)Christian	6	20%	8	6.66%
	c)Muslim	4	13.33%	0	0
	d)Others	0	0	0	0
7.	**Education**				
	a)No formal education	2	6.66%	6	20%
	b)Primary and High school	9	30%	8	26.66%
	c)Higher secondary	11	36.66%	10	33.33%
	d)UG	5	16.66%	3	10%
	e)PG	3	10%	3	10%
8.	**Occupation**				
	a)Professional	1	3.33%	0	0
	b)House wife	11	36.66%	10	33.33%
	c)Self employee	8	26.66%	6	20%
	d)Coolie	10	33.33%	14	45.66%

9.	**Monthly Family Income**				
	a)Below Rs.5,000	7	23.33%	5	16.66%
	b)Rs.5,001-10,000	16	53.33%	17	56.66%
	c)Rs,10,001-15,000	6	20%	5	16.66%
	d)Above Rs.15,000	1	3.33%	3	10%
10.	**H/O antenatal check up**				
	a)Regular	25	83.33%	26	86.66%
	b)Irregular	5	16.66%	4	13.33%
11.	**Type of pregnancy**				
	a)Planned	22	73.33%	25	83.33%
	b)Unplanned	8	26.66%	5	16.66%
12.	**Perceived state of Pregnancy**				
	a) Wanted pregnancy	30	100%	29	96.66%
	b) Unwanted pregnancy	0	0	1	3.33%
13.	**Plan of delivery**				
	a) Normalvaginal delivery	25	83.33%	27	90%
	b) Elective Cesarean section	5	16.66%	3	10%
	c) Not known	0	0	0	0

Table-I: Shows the frequency and percentage distribution of demographic variables of the respondents.

Regarding age in years, in the experimental group, majority of the participants i.e.20(66.66%) were in the age group of 21-25 and 8(26.66%) were in the age group of 25-30 and 2(6.66%) in the age group of 30-35 years whereas in the control group 19(63.33%)were in the age group of 21-25 years and 9(30%) were in the age group of 25-25 years and 1(3.33%) was equally distributed in the age group of 30-35 years and above 35 years.

Regarding Age at Marriage 20(66.66%) got married between the age 21-25 and 8(26.66%) got married between the age 25-30 and 2(6.66%) got married between 30-35 years in the experimental group whereas in control group 19(63.33%) got married between 21-25 years and 9(30%) got married between 25-30 and 1(3.33%) was equally distributed in the age group of 30-35 years and above 35 years.

Regarding Gestational age, 8(26.66%) fallen in the category of 32-34 weeks, 7(23.33%) had fallen between 35-37 weeks and 15(50%) had fallen in the category of 37-40 weeks in the experimental group whereas in control group 9(30%) had fallen in the category of 32-34weeks and 8(26.66%) had fallen in the category of 35-37 weeks and 13(43.33%) had fallen in the category of 37-40 weeks.

Regarding Area of Residence, 8(26.66%) were coming from urban and 22(73.33%) were coming from rural in experimental group whereas in control group 9(30%) were coming from urban and 21(70%) were coming from rural area.

Regarding Type of family, majority of the participants 18(60%)were living in nuclear family, 10(33.33%) were living in joint family, 2(6.66%) were coming from extended family in experimental group whereas in control group 16(60%) were living in nuclear family, 14(46.66%) were coming from joint family and no one belong to extended family.

Regarding Religion, majority 20(66.66%) were Hindus, 6(20%) were Christians, 4(13.33%) were Muslims in experimental group whereas in control group majority 22(73.33%) were Hindus, 8(26.66%) were Christians, and no one belong to Muslims. No one belongs to other religion in both groups..

Regarding Education, in the experimental group 2(6.66%) had no formal education, 9(30%) completed their primary schooling and High school, majority 11(36.66%) had completed higher secondary education, 5(16.66%) had completed their degree course,3(10%)were post graduates, whereas in control group 6(20%) were uneducated, 8(26.66%) had completed primary schooling, 10(33.33%) had completed their high school education and 3(10%) were equally distributed in Undergraduate and Post graduate.

Regarding Occupation, 1(3.33%) was a professional worker 1(3.33%), 11(36.66%) were skilled workers, 8(26.66%) were semi skilled workers, 10(33.33%) were labor in experimental group whereas in control group no one was a professional worker, 10(33.33%) were skilled worker, 6(20%) were semiskilled workers, 14(45.55%) were labor.

Regarding monthly income, 7(23.33%) were earning below 5000 Rs/ month, 16(53.33%) were getting the monthly salary between Rs.5001- 10,000, 6(20%) were getting the salary between Rs.10001-15,000, 1(3.33%) was getting the salary above Rs.15,000 in experimental group whereas in control group 5(16.66%) were earning below 5000 Rs/month, 17(56.66%) were getting the monthly salary between Rs.5,001-10,000, and 5(16.66%) were getting the salary above Rs.15,000.

Regarding History antenatal checkup majority 25(83.33%) went for regular antenatal check up while 5(16.66%) said irregular checkup in experimental group whereas in control group 26 (86.66%) had regular antenatal check up and 4(13.33%) had irregular antenatal check up.

Regarding Type of Pregnancy majority 22(73.33%) said it was planned pregnancy while 8(26.66%) said it was unplanned in experimental group whereas in control group 25(83.33%) said it was planned and 5(17.66%) said it was unplanned.

Regarding Perceived state of Pregnancy 30(100%) all said it was wanted pregnancy in experimental group, whereas in control group 29(96.66%) said it was wanted pregnancy while 1(3.33%) said it was unwanted pregnancy.

Regarding Plan of delivery majority 25(3.33%) wanted normal vaginal delivery,5(16.66%) wanted elective caesarian section in experimental group 27(90%) wanted normal vaginal delivery, 3(10%) wanted elective caesarian delivery and in both groups they didn't known whether it is a normal vaginal delivery or elective caesarian delivery.

It was inferred that in the experimental group majority of the participants 20(66.66%) were in the age group of 21-25, 20(66.66%) got married between the age 25-30, 15(50%) had the gestational age between 37-40 weeks, 22(73.33%) residing in rural area, 18(60%) were living in nuclear family, 20(66.66%) were Hindus, 11(36.66%)had completed their primary and high school, 11(36.66%) were skilled workers, 16(53.33%) were earning between Rs.10,001-15,000, 25(83.33%) went for regular antenatal check up, 22(73.33%) said it was planned pregnancy, 30(100%) participants said it was wanted pregnancy, 25(83.33%) said that they planned for normal vaginal delivery.

It was inferred that in control group majority 19(63.33%) got married between 21-25 years, 13(43.33%) had fallen in the category of gestational age between 37-40 weeks, 21(70%) were coming from rural area, 18(60%) were

living in nuclear family, 22(73.33%) were Hindus, 10(33.33%) had completed their higher secondary education,14(45.55%) were labour, 17(56.66%) were getting the monthly salary between Rs.5,001-10,000, 26 (86.66%) had regular antenatal check up, 25(83.33%) said it was planned, 29(96.66%) said it was wanted pregnancy, 27(90%) said they planned to have a normal vaginal delivery.

SECTION II : DATA ON PRE TEST LEVEL OF ANXIETY AMONG PRIMI ANTI NATAL MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

TABLE 2

DISTRIBUTION OF SAMPLES ACCORDING TO PRE AND POST TEST LEVEL OF ANXIETY

Level of anxiety	PRE TEST				POST TEST			
	Experimental group (N=30)		Control group (N=30)		Experimental group (N=30)		Control group (N=30)	
	F	%	F	%	F	%	F	%
Mild	0	0	0	0	26	86.66%	0	0
Moderate	24	80%	28	93.33%	4	13.33%	28	93.33%
Severe	6	20%	2	6.66%	0	0	2	6.66%
Total	30	100%	30	100%	30	100%	30	100%

Table 2 : Shows distribution of respondents according to pre and post test level of anxiety among primi anti natal mothers in experimental and control group

In pre test majority of the participants 24(80%) had moderate anxiety, 6(20%) had severe anxiety in experimental group whereas in the control group majority 28(93.33%) had moderate anxiety, 2(6.66%) had severe anxiety.

In post test majority of the participants 26(86.66%) had mild anxiety, 4(13.33%) had moderate anxiety and no one had severe anxiety in experimental group whereas in control group majority 28(93.33%) had moderate anxiety, 2(6.66%) had severe anxiety. It shows that lavender oil aromatherapy was effective.

FIG 1 : DISTRIBUTION OF SAMPLES ACCORDING TO POST TEST LEVEL OF ANXIETY IN EXPERIMENTAL AND CONTROL GROUP

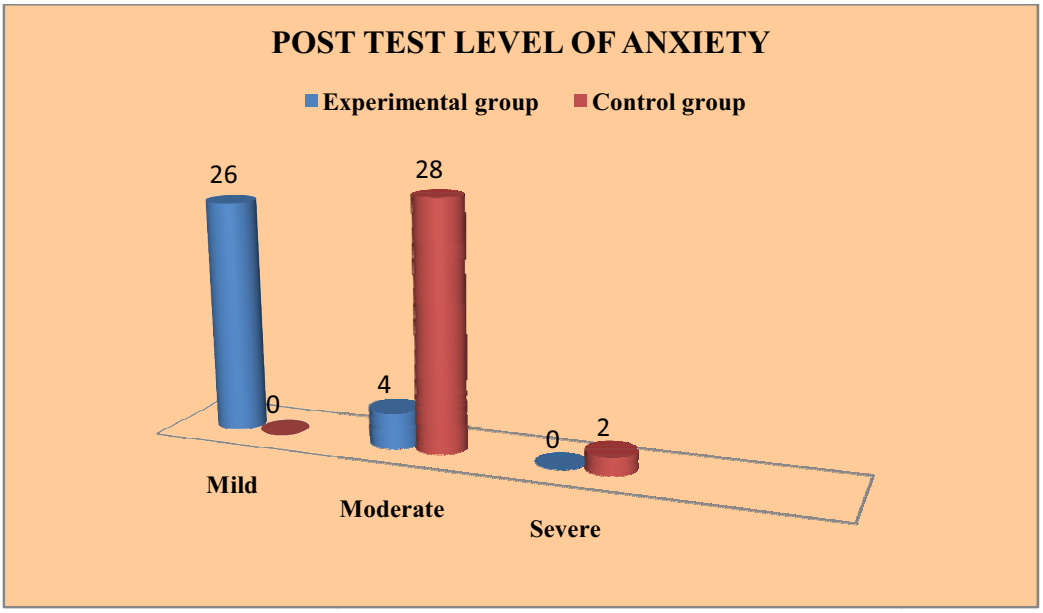

Fig 1: Shows distribution of samples according to post test level of anxiety in Experimental and Control group

It was inferred that in experimental group majority of the participants 26(86.66%) had mild anxiety, 4(13.33%) had moderate anxiety and no one had severe anxiety whereas in the control group majority 28(93.33%) had moderate anxiety, 2(6.66%) had severe anxiety. It shows that lavender oil aromatherapy was effective

SECTION III:DATA ON EFFECTIVENESS OF AROMATHERAPY

TABLE 3

EFFECTIVENESS OF PRE AND POST TEST LEVEL OF ANXIETY IN EXPERIMENTAL AND CONTROL GROUP

S. No		Experimental group			Control group			Mean Difference	't' Value
		Mean	Range	SD	Mean	Range	SD		
1.	Pre test	44.2	28-59 (31)	12.1	44.63	30-78 (48)	10	0.43	t= 12.29 Df=59,S
2.	Post test	22.1	14-30 (16)	4.01	44.23	28-76 (48)	9.6	22.13	

S- Significant NS-Not Significant

Table -3 : Shows Mean, Range, SD, Mean difference, and Unpaired 't' test value regarding pre and post test level of anxiety in experimental and control group

The above table shows the comparison between the pre and post test level of anxiety among primi anti natal mothers in experimental and control group. The obtained overall pre test mean score was 44.2(SD=12.1) and post test mean score was 22.1(SD=4.01) whereas in control group the obtained overall pre test mean score was 44.63(SD=10) and post test mean score was 44.23(SD=9.6). The obtained mean difference was 0.43 in pre test and 22.13 in

post test and the‘t’ value was 0.15(P <0.05) was not significant in pre test and t=12.29 (P<0.05) was significant post test. The overall post test mean score in experimental group was less than the overall post test mean score in control group.

Hence it was inferred that lavender oil aromatherapy was effective in reducing anxiety among primi anti natal mothers in experimental group.

FIG 2 : FINDINGS RELATED TO EFFECTIVENESS OF LAVENDER OIL AROMATHERAPY

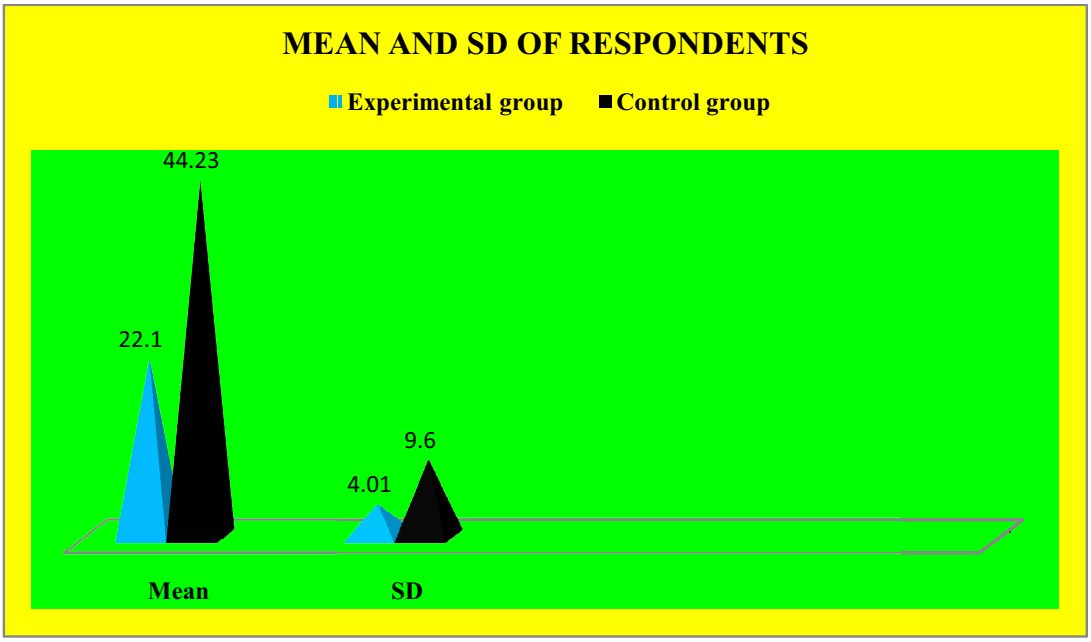

Fig 2: Shows mean, and standard deviation of post test level of anxiety in experimental and control group

The obtained overall post test mean score was 22.1(SD=4.01) in experimental group was less than the post test mean 44.23(SD = 9.6) in control group. The obtained mean difference was 22.13 and the‘t’ value was 12.29($P < 0.05$) significant.

It was inferred that compared to control group there was significant decrease in the post test mean score of anxiety in experimental group. There was a significant difference in post test level of anxiety among primi mothers in experimental and control group. Hence the research Hypothesis (H1) was accepted, Therefore it can be interpreted that lavender oil aromatherapy was effective in reducing anxiety among primi mothers.

SECTION - IV : DATA ON ASSOCITATION BETWEEN POST TEST LEVEL OF ANXIETY AND SELECTED DEMOGRAPHIC VARIABLES AMONG PRIMI MOTHERS IN EXPERIMENTAL GROUP

TABLE – 4

FREQUENCY, PERCENTAGE DISTRIBUTION AND CHI – SQUARE ASSOCITAION BETWEEN POST TEST LEVEL OF ANXIETY AND THEIR SELECTED DEMOGRAPHIC VARIABLES OF PRIMI MOTHERS IN EXPERIMENTAL GROUP

S. No	Demographic Variables	Experimental group	Percentage	χ^2
		F	%	
1.	**Age in years**			
	a)21-25	20	66.66%	χ^2 =12.7
	b)25-30	8	26.66%	df = 6
	c)30-35	2	6.66%	P < 0.05
	d)Above 35 years	0	0	S
2.	**Age at marriage**			
	a)21-25	20	66.66%	χ^2 =12.7
	b)25-30	8	26.66%	df = 6
	c)30-35	2	6.66%	P < 0.05
	d)Above 35 years	0	0	S
3.	**Gestational Age**			χ^2 =6.39
	a)32-34 weeks	8	26.66%	df = 4
	b)35-37 weeks	7	23.33%	P > 0.05
	c)37-40 weeks	15	50%	NS

4.	**Area of Residence**			χ^2 =98.9
	a)Urban	8	26.66%	df = 1
	b)Rural	22	73.33%	P < 0.05
				S
5.	**Type of family**			χ^2 =0.56
	a)Nuclear family	18	60%	df = 4
	b)Joint family	10	33.33%	P >0.05
	c)Extended family	2	6.66%	NS
6.	**Religion**			χ^2 =5.79
	a)Hindu	20	66.66%	1
	b)Christian	6	20%	df = 4
	c)Muslim	4	13.33%	P >0.05
	d)Others	0	0	NS
7.	**Education**			
	a) No formal education	2	6.66%	χ^2 =4.23
	b) Primary and High school	9	30%	df = 6
	c) Higher secondary	11	36.66%	P >0.05
	d) UG	5	16.66%	NS
	e) PG	3	10%	
8.	**Occupation**			
	a)Professional	1	3.33%	χ^2 =4.24
	b)Housewife	11	36.66%	df = 6
	c)Self employee	8	26.66%	P >0.05
	d)Coolie	10	33.33%	NS
9.	**Monthly Income**			
	a)Below Rs.5,000	7	23.33%	χ^2 =9.67
	b)Rs.5,001-10,000	16	53.33%	df = 6
	c)Rs,10,001-15,000	6	20%	P >0.05
	d)Above Rs.15,000	1	3.33%	NS

10.	**H/O antenatal check up** a)Regular b)Irregular	 25 5	 83.33% 16.66%	χ^2 =0.91 df = 1 P >0.05 NS
11.	**Type of pregnancy** a)Planned b)Unplanned	 22 8	 73.33% 26.66%	χ^2 = 5.54 df = 1 P <0.05 S
12.	**Perceived state of pregnancy** a)Wanted pregnancy b)Unwanted pregnancy	 30 0	 100% 0	χ^2 =0 df = 1 P >0.05 NS
13.	**Plan of delivery** a) Normal vaginal delivery b)Elective LSCS c)Don't know	 25 0 5	 83.33% 0 16.66%	χ^2 =0.23 df = 6 P >0.05 NS

Table - 4 : Shows the chi square value regarding post test level of anxiety among primi mothers in experimental group

The obtained chi square value regarding Age in years 12.7 (P<0.05), Age at marriage 12.7 (P<0.05), Area of residence 98.9(P<0.05), Mode of pregnancy 5.54(P<0.05) was stated significant at P>0.05 with the posttest level of anxiety.

The obtained chi square value regarding Type of family 0.56(P>0.05), Religion 5.791(P>0.05), Spiritual status 0(P>0.05), education 4.23(P>0.05), occupation 4.24(P>0.05), Monthly income 9.67(P>0.05), History of antenatal checkup 0.91(P>0.05), relationship with husband 0(P>0.05), Perceived state of pregnancy 0(P>0.05), Plan of delivery 0.23(P>0.05)was not significant.

From the above data we could see that the background factors Age of the mother, Age at marriage, Area of residence, Mode of pregnancy were significantly associated with post test level of anxiety among primi mothers in experimental group. The other background factors were not associated with post test level of anxiety among primi mothers in experimental group.

Hence it was inferred that there was significant association between the post test level of anxiety with their selected demographic variable among primi mothers in experimental group. Hence the Hypothesis 2 and 3 was accepted.

CHAPTER V

SUMMARY, FINDING, DISCUSSION, IMPLICATIONS, LIMITATIONS, RECOMMENDATION AND CONCLUSION

This chapter deals with summary, findings, discussion, implication, limitations, recommended and concluded. The essence of any research project is based on study findings, limitations, interpretation, of the research results and recommendations to incorporate the study implications .It also gives meaning to the results obtained in the study.

SUMMARY

The Objectives of the study were

- To assess the pre and post test level of anxiety among primi antenatal mothers in experimental and control group.

- To evaluate the effectiveness of aromatherapy on the level of anxiety among primi antenatal mothers in experimental group.

- To find out the association between the post test level of anxiety and the selected demographic variable among primi antenatal mothers in experimental group.

HYPOTHESIS

- **H_1**.There is a significant difference in the post test level of anxiety among primi mothers in experimental and control group.

- **H_2**. There is a significant difference in the pretest and post test level of anxiety among primi mothers in experimental group

- **H_3**. There is a significant association between the post test level of anxiety and the selected demographic variable among primi mothers in experimental group.

Extensive literature review was done for the present study and the reviews are presented in the following headings, Literature related to anxiety among pregnant mothers, Literature related to the use of aromatherapy among pregnant mothers, Literature related to lavender oil aromatherapy, Literature related to other techniques to reduce anxiety among pregnant mothers.

The conceptual framework selected for the present study was based on Nursing process model. This model helped the investigator to assess the effectiveness of lavender oil aromatherapy in reducing anxiety among pregnant mothers in experimental group.

The research design adopted for the present study was quasi experimental study. To evaluate the effectiveness of lavender oil aromatherapy in reducing anxiety among primi antenatal mothers. The independent variable was lavender oil aromatherapy and the dependant variable was level of anxiety.

Structured questionnaire was developed by the investigator to collect the baseline information and modified pregnancy related anxiety scale was used to assess the anxiety among the participants. The content validity of the tool was established by 5 experts. The reliability of the tool was ascertained by test retest method and reliability coefficient was r=0.9 and the tool was found to be reliable for the study. Pilot study was conducted in Saikrishna women's center ,Palani,Dindigul district among 5 primi mothers who fulfilled the sample selection criteria. The study was found to be reliable.

The main study was conducted in Sankararaman Nursing home and Saikrishna women's center,Palani,Dindigul district. Prior permission from the authorities was obtained. Non probability purposive sampling technique was used to select the samples. Purpose of the study was explained to them and informed consent was obtained. Baseline information's of the participants were collected through structured interview schedule. Procedure of lavender oil aromatherapy was explained to the participants and administered for three days in experimental group while for the participants in control group procedure was withheld. On the third day evening level of anxiety was measured in both the groups. The data gathered were analyzed and interpreted manually. A probability of $P<0.05$ level of significance was considered significant.

FINDINGS

The major findings of the study were classified under following headings.

1. Findings on background factors of primi mothers in experimental and control group

In the experimental group majority of the participants 20(66.66%) were in the age group of 21-25, 20(66.66%) got married between the aged 25-30, 15(50%) had the gestational age of 37-40 weeks, 22(73.33%) residing in rural area, 18(60%) were living in nuclear family, 20(66.66%) were Hindus, 9(30%) had completed their primary schooling, 11(36.66%) were skilled workers, 16(53.33%) were earning between Rs.10,001-15,000, 25(83.33%) went for regular antenatal check up, 30(100%) had good relationship with husband, 22(73.33%) said it was planned pregnancy, 30(100%) participants said it was wanted pregnancy, 25(83.33%) said that they planned for normal vaginal delivery.

In control group majority 19(63.33%) got married between 21-25 years, 13(43.33%) had fallen in the category of 37-40 weeks, 21(70%) were coming from rural area, 18(60%) were living in nuclear family, 22(73.33%) were Hindus, 30(100%) had strong faith in God, 14(45.55%) were labour, 17(56.66%) were getting the monthly salary between Rs.5,001-10,000, 26 (86.66%) had regular antenatal check up, 28(93.33%) had good relationship with their husband, 25(83.33%) said it was planned, 29(96.66%) said it was wanted pregnancy, 27(90%) said they planned to have a normal vaginal delivery.

2. Findings on posttest level of anxiety among primi mothers in experimental and control group

In experimental group majority of the participants 26(86.66%) had mild anxiety, 4(13.33%) had moderate anxiety and no one had severe anxiety whereas in the control group majority 28(93.33%) had moderate anxiety, 2(6.66%) had severe anxiety. It shows that lavender oil aromatherapy was effective.

3. Findings related to effectiveness of aromatherapy

The obtained overall post test mean score was 21.9(SD=3.3) in experimental group was less than the post test mean 43.9(SD =8.5) in control group. The obtained mean difference was 22 and the 't' value was 7.3 significant at the level of 0.05.

It was evident that compared to control group there was significant decrease in the post test mean score of anxiety in experimental group. There was a significant difference in post test level of anxiety among primi mothers in experimental and control group. Hence the research Hypothesis (H1) was accepted, Therefore it can be interpreted that lavender oil aromatherapy was effective in reducing anxiety among primi mothers.

4. Findings on association between post test level of anxiety and background factors among primi mothers in experimental group

The background factors Age of the mother, Age at marriage, Area of residence, Mode of pregnancy were significantly associated with the pre test and post test level of anxiety among primi antenatal mothers in experimental

group. The other background factors were not associated with pre and post test level of anxiety among primi mothers in experimental group.

DISCUSSION

The result of the study were discussed according to the objectives of the study.

Objective I: To assess the post test level of anxiety among primi mothers in experimental and control group.

In experimental group majority of the participants 26(86.66%) had mild anxiety, 4(13.33%) had moderate anxiety and no one had severe anxiety whereas in the control group majority 28(93.33%) had moderate anxiety, 2(6.66%) had severe anxiety.

The above findings were supported by **Kasper etal (2006)** investigated the efficacy of lavender oil (WS® 1265) in the reduction of anxiety in comparison to placebo in a primary care setting. In 27 general and psychiatric practices, 221 adults reporting unspecified anxiety were randomized to receive 80 mg per day of lavender oil or placebo for 10 weeks with office visits every 2 weeks. WS® 1265 was superior to placebo regarding the percentage of responders (76.9 vs. 49.1%, $P<0.001$). Researchers concluded that the lavender oil "is both efficacious and safe" for treating anxiety and predicted that it could emerge as "a gentle therapeutic alternative in the treatment of anxiety."

Objective II: To evaluate the effectiveness of aromatherapy in reducing anxiety among primi mothers in experimental group.

The obtained overall post test mean score was 21.9(SD=3.3) in experimental group was less than the post test mean 43.9(SD =8.5) in control group. The obtained mean difference was 22 and the 't' value was 7.3 significant at the level of 0.05.

The above findings were supported by **Yuvansun etal (2009)** conducted a experimental study in South Korea to identify the effects of aromatherapy massage on the anxiety and self-esteem experienced by Korean pregnant women. The subjects comprised 36 pregnant women: 16 in the experimental group and 20 in the control group. Aromatherapy massage using lavender, chamomile, rosemary, and lemon was given to the experimental group only. Each inhalation session lasted 20 min, and was performed 3 times per week for two 3-week periods with an intervening 1-week break. The study concluded that aromatherapy massage exerts positive effects on anxiety and self-esteem.

Objective III: To find out the association between the post test level of anxiety and the selected demographic variable among primi mothers in experimental group.

The background factors Age of the mother, Age at marriage, Area of residence, Mode of pregnancy were significantly associated with post test level of anxiety among primi mothers in experimental group. The other background factors were not associated with post test level of anxiety among primi mothers in experimental group.

The above findings were supported by **Yuvansun etal (2009)** conducted a experimental study in South Korea to identify the effects of aromatherapy massage on the anxiety and self-esteem experienced by Korean pregnant women. The subjects comprised 36 pregnant women: 16 in the experimental group and 20 in the control group. Purposive sampling technique was used to select the samples. Aromatherapy massage using lavender, chamomile, rosemary, and lemon was given to the experimental group only. Each massage session lasted 20 min, and was performed 3 times per week for two 3-week periods with an intervening 1-week break. Data were edited, tabulated, analysed by using SPSS version 15. The results showed that the intervention produced significant association in the anxiety and self-esteem and no significant association in blood pressure or pulse rate between the two groups. The study concluded that aromatherapy massage exerts positive effects on anxiety and self-esteem. However, more objective, clinical measures should be applied in a future study with a randomized placebo-controlled design.

IMPLICATIONS OF THE STUDY

The findings of the present study have implications for nursing practice, nursing administration, nursing education and nursing research.

The following conclusions were drawn on the basis of findings of the study :

- Majority of the participants in experimental group were experiencing mild anxiety in experimental group while majority of the participants were experiencing moderate anxiety in control group.
- The administration of lavender oil aromatherapy helped the clients to reduce anxiety.
- Lavender oil aromatherapy was proved to be very effective non pharmacological method to reduce anxiety.

NURSING PRACTICE

- Mothers experiencing anxiety during pregnancy affects the maternal and fetal outcome.

- An in service education program can be organized to train the nurses about the use of aroma therapy during pregnancy to reduce anxiety.

- Nurses should understand the importance of different non pharmacological, measures to reduce anxiety during pregnancy.

NURSING ADMINISTRATION

- The nurse administrator needs to organize an in-service education program for the nurses to teach them about alternative and complementary therapies like aroma therapy, conduct workshops, conferences, and seminars on non-pharmacological methods to reduce anxiety during pregnancy.

NURSING EDUCATION

- The students should be taught in detail about the all non-pharmacological measures to reduce anxiety during pregnancy and improve the maternal and fetal outcome.

- The alternative and complimentary therapies (the aroma therapy is one of them) can be included in the syllabus of the curriculum of basic nursing program.

NURSING RESEARCH

- Opportunities to be given for doing research in field of aroma therapy as well as other relaxation techniques to reduce anxiety of the mothers during pregnancy to improve the labour outcome.

- Emphasis should also be given on publication of findings of these types of researches in various journals. Research findings could also be presented at various nursing forums for developing awareness among nurses.

LIMITATIONS

The limitations of the study were:

- The study was confined to a small number of the primi antenatal mothers that limits the generalization of the findings.

- The study did not include multi para mothers.

- It was not associated with high risk factors with vertex presentation and occipito-anterior position.

RECOMMENDATIONS

On the basis of the findings, the following recommendations are offered for future research:

- The study can be replicated on larger sample in different setting so that the findings can be generalized to larger population.

- A similar study may be done on both primi para and multipara mothers.

- A study can be conducted to assess the effectiveness of other nursing measures such as acupuncture, yoga, music therapy, guided imagery, self instructional module for effective management of anxiety during pregnancy.

- The study can be replicated on other kind of patients other than mothers during pregnancy.

- A study can be done using music therapy with combination to other relaxation therapy during pregnancy.

- A comparative study can be done by using aromatherapy and other non pharmacological interventions to measure the effectiveness of therapies in reducing anxiety during pregnancy.

CONCLUSION

High prevalence of anxiety during pregnancy indicate that women in childbearing years could be vulnerable to anxiety. It is suggested that physicians in all patient care specialties need to be familiar with the prevalence and course of this disorders, particularly during pregnancy & post-partum period. The obstetrician should regularly test for anxiety with simple means from the very first moment of planning for a child and should use the test results for pregnancy mood profile. The profile could assist in determining the risk of having low birth weight baby, pre mature baby, unnecessary cesarean section without medical indication. The evidence from this & other studies, however, provide an impetus for developing prevention, intervention & support programs for highly anxious pregnant women. These programs could include stress reduction, instruction as well as treatment to reduce anxiety & neuro-endocrine reactions to the stress throughout pregnancy, or even after conception. The benefits of implementing good mental health in antenatal care may have long lasting benefits for the mother, infant, family and society.

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APPENDIX - I

LETTER SEEKING PERMISSION TO CONDUCT MAIN STUDY

G.O.M.S.No. : 40 dt : 05.02.2007

SHIVPARVATHI MANDRADIAR INSTITUTE OF HEALTH SCIENCE

(COLLEGE OF NURSING)

Palayakottai (Po) Tirupur (Dt) - 638 108. TamilNadu.
Tel : 04257-242200, 241800, Mobile : 9486033000 Fax : 04257-242200
E-Mail : spmihs@gmail.com. Web : www.spmihscollegeofnursing.org
(Recognized by Indian Nursing Council, Tamilnadu Nurses & Midwives Council, Affiliated to The TamilNadu Dr.M.G.R.Medical University)

To

Respected Sir,

Greetings from Shivparvathi Mandradiar Institute of Health Sciences, Tirupur.

Sub: Requisition of avail the permission to conduct project – Regarding.

This is to certify that **Mrs.Sasirekha.C** is the bonafied student of our college studying M.Sc(Nursing) II-Year in the academic year of 2014-2015. As part of the M.Sc Nursing curriculum prescribed by the TamilNadu Dr.M.G.R.Medical University, Chennai, She need to conduct a project and she is willing to do at your institution. So, kindly do the needful and grant her permission to conduct the study.

The details of the project will be briefed to you by her in person

Thanking you

Yours sincerely

PRINCIPAL
SHIVPARVATHI MANDRADIAR
INSTITUTE OF HEALTH SCIENCES
PALAYAKOTAI-638 108.

APPENDIX - II

LETTER GRANTING TO CONDUCT MAIN STUDY

G.O.M.S.No. : 40 dt : 05.02.2007

SHIVPARVATHI MANDRADIAR INSTITUTE OF HEALTH SCIENCE

(COLLEGE OF NURSING)

Palayakottai (Po) Tirupur (Dt) - 638 108. TamilNadu.
Tel : 04257-242200, 241800, Mobile : 9486033000 Fax : 04257-242200
E-Mail : spmihs@gmail.com. Web : www.spmihscollegeofnursing.org
(Recognized by Indian Nursing Council, Tamilnadu Nurses & Midwives Council, Affiliated to The TamilNadu Dr.M.G.R.Medical University)

To

Respected Sir,

Greetings from Shivparvathi Mandradiar Institute of Health Sciences, Tirupur.

Sub: Requisition of avail the permission to conduct project – Regarding.

This is to certify that **Mrs.Sasirekha.C** is the bonafied student of our college studying M.Sc(Nursing) II-Year in the academic year of 2014-2015. As part of the M.Sc Nursing curriculum prescribed by the TamilNadu Dr.M.G.R.Medical University, Chennai, She need to conduct a project and she is willing to do at your institution. So, kindly do the needful and grant her permission to conduct the study.

The details of the project will be briefed to you by her in person

Thanking you

Yours sincerely

PRINCIPAL
SHIVPARVATHI MANDRADIAR
INSTITUTE OF HEALTH SCIENCES
PALAYAKOTAI-638 108.

Dr. S. SARUMATHI M.B.B.S.,
Regd. No: [illegible]
Consultant [illegible]
Sankararaman [illegible]
50, SUBRAMANIYAPUR

Dr.GEETHA SUBBURAJ,M.D.,D.N.B.,
Reg. No: 50489
SAIKRISHNA WOMEN'S CENTRE
1, Ramalingam Street,
Shanmugapuram, PALANI-624 601.

APPENDIX – III

AROMA THERAPY TRAINING CERTIFICATE

LAVANYA BEAUTY PARLOR

THIS CERTIFIES THAT

SASI REKHA.C

Has successfully completed the required course of aromatherapy
and is therefore awarded this

CERTIFICATE

Lavanya Beautician

APPENDIX - IV

LETTER REQUESTING SUGGESTION FOR ESTABLISHING CONTENT VALIDITY

From,

301322052,
II Year M.Sc (N),
Shivparvathi Mandradiar Institute of Health Sciences,
Palayakottai, Tirupur.

To,

_____
_____
_____

THROUGH,

The Principal,
Shivparvathi Mandradiar Institute of Health Sciences,
Palayakottai, Tirupur.

Respected Sir/Madam,

Subject: Letter requesting opinion and suggestions from experts for establishing content validity of tool...Regarding

I am II Year M.Sc Nursing student in Shivparvathi Mandradiar Institute of Health Sciences. As a partial fulfillment of Masters Degree in Nursing, I have selected the topic mentioned below for the research project to be submitted to "The Tamil Nadu Dr. M.G.R. Medical University Chennai". **Topic: "A quasi experimental study to assess the effectiveness of Aromatherapy in reducing anxiety among primi antenatal mothers in selected maternity hospitals, Dindigul district."**

I kindly request you to validate the following enclosure and give your expert opinion and suggestions for necessary modifications of the tool.

Thanking you in Anticipation

Place: Yours sincerely,

Date:

(301322052)

Enclosed here with: 1.Proposal, 2.Tool

APPENDIX - V

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of 301322052 M.Sc Nursing student is undertaking **"A Quasi Experimental Study to Assess the Effectiveness of Aromatherapy on the Level of Anxiety Among Primi Mothers in Selected Maternity Hospitals, Dindigul District".**

Signature of the Expert :

Name :

Designation :

Date :

APPENDIX - VI

LIST OF EXPERTS

1. **Dr.Geetha Suburaj, M.D., D.N.B.,**
   Sai Krishna Women's Centre,
   Palani.

2. **Sabirabanu, M.Sc(N)., OBG.,**
   Principal of Matha College of Nusrsing,
   Manamadurai.

3. **Thamariselvi, M.Sc(N)., OBG.,**
   Principal Rover College of Nursing,
   Perambur.

4. **Jasmin Santha, M.Sc(N)., OBG., Professor,**
   CSI Jayaraj Annabhakiyam College of Nursing,
   Manamadurai.

5. **Arulmozhi, M.Sc(N)., Ph.D.,**
   Associate Professor,
   Matha College of Nursing,
   Manamadurai.

APPENDIX – VII

INFORMED CONSENT FORM

Consent form for participation in Research

I give my consent to participate in the research title "A Quasi Experimental Study to Assess the Effectiveness of Aromatherapy in reducing Anxiety among Primi Mothers in a Selected Hospitals at Sankararaman Nursing Home and Sai Krishna Hospital District", which is being conducted by 301322052 M.Sc (N), Shivparvathi Mandradiar Institute of Health Sciences, Palayakottai, Tamilnadu, as a part of her curriculum. I understand that this participant is entirely voluntary; I can withdraw consent at any time. I have understood that

1. The reason for the research is to assess the effectiveness of aromatherapy.
2. The benefit that I may expect from the research is reduction of anxiety.
3. No discomfort or stresses are foreseen.
4. No invocatory procedures are involved.
5. The results of the participants will be confidential.
6. The researcher will answer any further questions about the research.

Name & Signature of Researcher

Name & Signature of Parent

ஆய்வில் கலந்து கொள்ள கர்ப்பிணி தாயார் அளிக்கும் ஒப்புதல் படிவம்

தமிழ் நாட்டில் பழையகோட்டையில் உள்ள சிவபார்வதி மன்றடியார் செவிலியர் கல்லூரியில் முதுநிலை இரண்டாம் ஆண்டு செவிலியர் பட்டபடிப்பு பயிலும் மாணவி 301322052 நடத்தும் "முதன் முதலாக கருவுற்ற தாய்மார்களிடத்தில் உள்ள பயத்தை குறைப்பதில் லாவண்டர் எண்ணெய் நறுமருந்து சிகிச்சையின் பங்கு '' குறித்த ஆய்வில் கலந்து கொள்ள யாருடைய வற்புருத்தலும் இன்றி நான் மனப்பூர்வமாக ஒப்புதல் அளிக்கிறேன்.

நான் இந்த ஆய்வில் இருந்து எந்த நேரத்திலும் எவ்வித நிபந்தனைகளும் இன்றி விலகிக்கொள்ளலாம் என்பதை அறிவேன். மேலும் இந்த ஆய்வில் எந்தவித உடற் கஷ்டங்களோ மனக்கஷ்டங்களோ ஏற்படாது என்பதையும் நான் அறிவேன். இந்த ஆய்வின் முடிவுகள் ரகசியமாக பாதுகாக்கப்படும் என்பதையும் நான் அறிவேன்.

தேவை ஏற்படும்போது இந்த ஆய்வின் முடிவுகள் செவிலியர் சார்ந்த பத்திரிக்கைகளிலும் கருத்து அரங்கங்களிலும் வெளியிட முழு சம்மதம் அளிக்கிறேன். இந்த ஆய்வினை பற்றிய சந்தேகங்களை தெளிவுபடுத்திக்கொள்ள மாணவி 301322052 எந்த நேரத்திலும் கைப்பேசியில் (7418480803) தொடர்பு கொள்ளலாம் என்பதையும் அறிவேன்.

பங்கு கொள்பவரின் கையொப்பம் : தேதி:

ஆராய்ச்சியாளரின் கையொப்பம் : **தேதி** :

APPENDIX - IX

PART I – DEMOGRAPHIC DATA

1.Age in years

a) 21-25

b) 25-30

c) 30-35

d) Above 35years

2. Age at marriage

a) 21-25

b) 25-30

c) 30-35

d) Above 35 years

3.Gestational Age

a) 32-34 weeks

b) 35-37 weeks

c) 37-40 weeks

4.Area of Residence

a) Urban

b) Rural

5.Type of family

a) Nuclear family

b) Joint family

c) Extended family

6.Religion

a) Hindu

b) Chrisitian

c) Muslim

d) Others

7.Education

a) No formal education

b) Primary and High school

c) Higher secondary

d) UG

e) PG

8.Occupation

a) Professional

b) Housewife

c) Self employee

d) Coolie

9.Monthly Family Income

a) Below Rs.5,000

b) Rs.5,001-10,000

c) Rs,10,001-15,000

d) Above Rs.15,000

10.History of antenatal check up

a) Regualr

b) Irregular

11.Type of pregnancy

a) Planned

b) Unplanned

12.Perceived state of Pregnancy

a) Wanted pregnancy

b) Unwanted pregnancy

13.Plan of delivery

a) Normal vaginal delivery

b) Elective Caesarian section

c) Not known

PART II : MODIFIED PREGNANCY RELATED ANXIETY SCALE

S. No	Statements	Never	Some times	Most of the time	Almost all the time
		1	2	3	4
1.	I am worried about the enormous weight gain.				
2.	I may not regain the figure after delivery.				
3.	I am worried about the unattractive appearance of pregnancy.				
4.	I may develop medical problems like diabetes and hypertension during pregnancy.				
5.	I am frightened about the minor ailments in third trimester.				
6.	I am nervous about the delivery.				
7.	I am jittery of having a hard or difficult labour and delivery.				
8.	I am worried about the painful uterine contractions.				
9.	I am tensed about the pain.				
10.	I may develop any complications like postpartum haemorrhage etc, during the third trimester.				
11.	I am afraid to face the labour room.				
12.	I am fear of elective caesarean section.				

13.	I feel pleasant about having the baby				
14.	I am afraid about the health of the baby.				
15.	I feel feeding may affect the beauty.				
16.	I am worried about the weight of the baby				
17.	I am confident in taking care of a new baby				
18.	I take responsibility happily being a mother and wife.				
19.	I am concern about the economical expenses.				
20.	My family members will support me to take care of a new baby.				

SCORING

SCORE	LEVEL OF ANXIETY
0-26	Mild
27-53	Moderate
54-80	Severe

பிரசவ காலத்தில் ஏற்படும் பயத்தை அறியும் அட்டவணை

வ. எண்	பொருளடக்கம்	தேவை	சில நேரம்	அதிக நேரம்	எல்லா நேரமும்
		1	2	3	4
1.	நான் ரொம்ப கவலைபடுகிறேன் உடல் எடை கூடி விடும் என்று				
2.	எனது பிரசவத்திற்கு பிறகு என் அழகை மீண்டும் பெற முடியுமா என்று தெரியவில்லை				
3.	கர்ப்பமாக இருக்கும் பொழுது நான் அழகாக இல்லை என்று உணர்கிறேன்				
4.	கர்ப்பமாக இருக்கும் பொழுது எனக்கு சர்க்கரை நோய், உயர் ரத்த அழுத்த நோய் வரலாம் என்று நினைக்கிறேன்				
5.	கர்ப்பகாலத்தில் ஏதேனும் மாற்றம் வரும் என்று கவலை அடைகிறேன்				
6.	பிரசவத்தைக் குறித்து நான் மிகவும் பயப்படுகிறேன்				
7.	பிரசவம் மிகவும் கடினமாக இருக்குமோ என்று நான் பயப்படுகிறேன்				
8.	பிரசவ வலியை குறித்து எனக்கு கவலையாக இருக்கிறது				
9.	வலியை நினைத்து பயப்படுகிறேன்				
10.	பிரசவத்திற்க பிறகு ரத்தப்போக்கு ஏற்படுமோ என்று நினைக்கிறேன்				
11.	பிரசவ அறையை எதிர்கொள்ள பயமாக இருக்கிறது				
12.	பிரசவத்தை குறித்த அறுவை சிகிச்சை குறித்து பயமாக இருக்கிறது				
13.	பிறக்க போகும் குழந்தையை நினைத்து மகிழ்ச்சி அடைகிறேன்				

14.	குழந்தையின் உடல் நிலையைக் குறித்து கவலைப்படுகிறேன்				
15.	தாய்ப்பால் குடுப்பதினால் என் அழகு குறையும் என்று கவவைப்படுகிறேன்				
16.	குழந்தையின் எடையைக் குறித்து கவலையடைகிறேன்				
17.	பிறந்த குழந்தையை பராமரிப்பதில் எனக்கு நம்பிக்கை உள்ளது				
18.	தாயாகவும் மனைவியாகவும் பொறுப்பேற்றுக் கொள்வேன்				
19.	பொருளாதார செலவைப் பற்றிய கவலை எனக்கு உள்ளது				
20.	பிறந்த குழந்தையை பராமரிப்பதில் என் குடும்பத்தார் உதவி செய்வார்கள்				

மதிப்பெண்கள்

மதிப்பெண்கள்	பயத்தின் நிலைகள்
0-26	சாதாரணம்
27-53	நடுநிலை
54-80	அதிகமாக