EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA MOTHERS AT SELECTED HOSPITALS, TAMILNADU

By

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This thesis does not contain any part of work that has been submitted for the award of any diploma, degree, associateship or other similar title in this university or any other university without citation.

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ABBREVIATIONS

WHO	World Health Organization
BC	Breast Crawl
CS	Caesarean Section
UNICEF	United Nations Children's Emergency Fund
WABA	World Alliance for Breast Feeding Action
BFHI	Baby Friendly Hospital Initiative.
IYCF	Infant and Young Child Feeding
SSC	Skin to Skin Contact
CC	Conventional Care
IBFAT	Infant Breast Feeding Assessment Tool
PBI	Present Behavioural Intensity
VASA	Visual Analogue Scale for Anxiety
CAT	Complementary and Alternative Therapy
VAS	Visual Analogue Scale
RCT	Randomized Controlled Trial
NRS	Numerical Rating Scale
ERA	Educated Researcher Assistant
MMR	Maternal Mortality Rate
PBI	Present Behavioural Intensity
PPH	Post Partum Haemorrhage
MDG	Millennium Development Goal
SRS	Sample Registration System
ISSK	lanani Shishu Suraksha Karyakaran

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ABSTRACT

Pregnancy and childbirth are universally celebrated events, yet childbirth is one of the most common stressed and painful situation which adversely affect the maternal and child health. If a woman is healthy, she can go through pregnancy and childbirth with minimum discomforts and complications.

Statement of the problem:

Effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers at selected hospitals, Tamilnadu.

Objectives

- To assess the maternal and newborn outcome in experimental and control group among primigravida mothers.
- To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among experimental and control group of primigravida mothers.
- To find out the association between post test scores on maternal outcome among experimental and control group of primigravida mothers with their selected demographic variables.
- To find out the association between post test scores on newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

Hypotheses

Hi: There is a significant difference in effectiveness of selected nursing intervention on maternal outcome among primigravida mothers in experimental and control group.

H_2: There is a significant difference in effectiveness of selected nursing intervention on newborn outcome among primigravida mothers in experimental and control group.

H_3: There is a significant association between post test scores of maternal outcome among experimental and control group of primigravida mothers with their selected demographic variables.

H_4: There is a significant association between post test scores of newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

Research Methodology

A true experimental design was used in this study. The sample size of the study was 231 primigravida mothers from 37-42 weeks of gestational age, the instrument used for data collection were a visual analogue scale, observational check list and Apgar score chart and structured interview to collect demographic variable. Selected nursing interventions (Experimental group) and routine labour care (Control group) was given to primigravida mothers on individual basis. Effectiveness of Selected Nursing Intervention on Maternal and Newborn Outcome among primigravida mothers was measured by Visual Analogue Scale (VAS), observational check list and Apgar score chart.

Results

- Selected nursing interventions are effective in reducing pain level and maternal and newborn outcome. The ‘t’ test value for experimental group level of pain perception significantly reduced, during latent phase of labour was 5.70($p<0.05$),active phase of labour was 7.63($p<0.05$) and transitional phase of labour was 8.61($p<0.005$) than the control group .

- In experimental group, the maternal outcome ‘t’ test value was 10.69($p<0.005$ significant),Apgar score ‘t’ test value was 3.14($p<0.005$ significant),newborn outcome ‘t’ test value was 8.95($p<0.005$ significant) than control group.

- There is no significant association between post test scores of maternal and newborn outcome with demographic variables of primigravida mothers in experimental and control group.

- There is significant association between post test scores of maternal and newborn outcome with demographic variables of primigravida mothers control group with income and antenatal check up.

Conclusion

Selected nursing interventions of slow-paced breathing exercise, sacral massage, position changes and breast crawl were an effective intervention to reduce the level of pain perception, and promote maternal and newborn outcome among primigravida mothers. Selected nursing interventions were effective than routine labour ward care among primigravida mothers. The result of the study showed

that routine practice of these selected nursing intervention would be beneficial in reducing the level of pain and promote maternal and newborn outcome.

Implications

The study has major implications for nursing practise, nursing education, nursing administration and nursing research.

(Key words: Selected nursing intervention, Primigravida mothers, Maternal and Newborn outcome)

CHAPTER I

INTRODUCTION

"HEALTHY BABIES START WITH HEALTHY MOTHERS"

Pregnancy is a natural event, supposed to be of celebration and joy. But still mothers have risk of developing discomforts and complications during pregnancy and delivery. To prevent these, government has implemented many programmes through the concept of safe motherhood, which includes good health status before conception, regular antenatal visits of minimum three times during pregnancy, hospital delivery, tertiary health care services in complicating cases, 24 hours observation after delivery of mother and baby and follow up for six weeks after delivery.

Mothers undergo various physiological and emotional changes during pregnancy. It is natural due to conception and development of embryo inside the uterine cavity. Physiological changes causes discomforts like vomiting sensation, acidity, urinary incontinence, malaise, anorexia, sleeping difficulty, gingivitis, oedema etc. These discomforts are signs that the body is naturally preparing itself for new life. If a woman is healthy, she can go through pregnancy and childbirth with minimum discomforts and complications.

In the women's life, childbirth is one of the most stressful events. Though it should be enjoyable by women with each experience of child birth and calls for celebration. But anxiety and fear about childbirth often inhibits the most women from enjoying this childbirth experience. Mother and health care providers need adequate knowledge about signs of labour and delivery in general that bring the feeling of self confidence and emotional well being, and it will be very crucial in ensuring a successful labour. So it is very important to health care providers towards the labour

and delivery on which critical decision can be made in the best interest of mother and newborn.[1]

The pain experienced by women during labour involves a subjective experience of complex interaction which includes physical, social, psychological, environmental and cultural factors. Most of the descriptive studies on labour pain experience significantly affect the physical and psychological factors and about the various methods for measuring pain experience.[2]

Most of the women, during the first phase of labour, experience the visceral pain, like cramping due to contraction of uterus and experience continuous sharper somatic pain during second phase of labour. This pain due to pressure created by fetal occiput descent during labour. Generally primigravida mothers perceive sensory pain in latent phase of labour, whereas multigravida women may perceive less intense pain perception during first stage of labour.[3]

During labour, pain impulses transmitted from the uterus and cervix towards lower thoracic and along with T11 and T12, sympathetic upper lumbar nerves, originated from the uterine cavity and cervical canal. Stretching the lower abdomen on cervical canal promotes cervical dilatation and causes severe referral pain. The pain radiates from fundus of the uterus, towards lower abdomen and thighs. During uterine contraction, naturally women felt severe pain, on lumbosacral region, gluteus, iliac crests, gluteus and towards the thighs. Some of them may experience residual discomfort during and in between the contractions of uterus.[4]

A labour pain experience is stressful event for all primigravida and multipara mothers. A symposium was conducted on evidence-based approach, on supportive measures for reduction of pain during labour which brought scientific knowledge among midwives, obstetricians, family physicians and childbirth practitioners. This brought scientific

knowledge and systematic information about labour pain.

Management of labor pain plays a vital role among maternity care giver or midwife through by close involvement during labour, helps to provide appropriate intervention, which can reduce labour pain. Some of the non pharmacologic methods of pain relief methods are used during delivery which includes, massage therapy, warm water baths, intra dermal water blocks, and breathing exercises which are very effective pain reduction methods during labour. These alternative therapies of comfort methods are easily available, safe and can be administered by the midwives in labour ward.[5]

Patterned breathing defined as the slow deep inhalation through nose and expelled out through mouth in the same manner, at any possible number, rates and depths. During labour, women prefer to breathe deeply through diaphragm to make their abdomen filled with air. Some women may prefer to breathe lightly through their chest filled with air. It gives calming and relaxing effect during labour in order to coping with various types of pain and ability to cope with discomfort, fear and anxiety. At the beginning and end of each uterine contraction taking a deep breathing by parturients provides more oxygen supply to baby and uterine muscles during labour.[6]

The women's perception of acute pain in labour is influenced by cultural factors and learned behaviors. The level of perception of labour pain various from mother to mother during labour and based on childbirth experience. Self-confidence of women's coping ability during first phase is the best predictor of pain perception. In some countries in order to avoid severe labour pain most primigravida mothers plan for caesarean section. . Fear and anxiety of pain during labour correlate with a highly towards their cultural values and experience of pain. During labour, confidence and coping ability of pain in women would be the essential predictor of

childbirth pain experience where one third of the women perceive severe pain. Many mothers also request analgesia for pain relief during labour, to avoid these many non-pharmacological methods to be administered for this purpose.[5]

Psycho- prophylaxis method of psycho- analgesic technique was first implemented by Dr. Lamaze who is the psycho prophylaxis originator . During labour, these methods become very popular to avoid unnecessary drugs during delivery, especially among primigravida mothers. The Lamaze technique which involves education of "positive" conditioned behaviours during labour among women.. This is the supportive measure involves continuous support during labour by doula and the use of slow-paced breathing and relaxation techniques. He suggested that controlled and conditional breathing exercises were very effective in blocking pain perception during uterine contractions. The primary advantage of Lamaze technique is to avoid unnecessary analgesics which alter the maternal physiology, and protect from fetal depression from the narcotics use.[7]

1.1 BACKGROUND OF THE STUDY

General concepts of labour and its management

Definition of Labour

It is the physiologic process of expulsion of fetus, placenta and membranes from the uterus to outer world.[45]

Stages of labour

There are three stages of labour involves first, second and third stage.

First phase of labour

- It starts from regular rhythmic, contractions to full dilatation of cervix, about 1 Ocm.
- This stage is further classified as latent and an active stage of labour.

Latent stage of labour

- It starts from mild uterine contractions which promotes softening and shortening of cervical canal.
- In this phase uterine contractions become progressively increased with rhythmic in nature and stronger.

The active phase of labour

- It usually begins from 3-4 cm of cervical dilation and with progressive cervical dilatation and descent of the fetus presenting part.

Second stage of labour

- It is from the dilatation of full cervix to fetal expulsion
- The prolonged labour is considered that second phase duration exceeds more than 3 hours in nulliparous and more than 2 hours in multiparous
- In multiparous women, the second stage of labour considered prolonged, if it exceeds 2 hours after regional anaesthesia or 1 hour without this.

Third phase of labour

- It is from the expulsion of baby to expulsion of the placenta and it's membranes.
- The placenta expelled out between 5 to 10 minutes after the delivery of the baby. If it takes more than 30 minutes, take an active management.
- The third stage of labour is considered prolonged when the duration exceeds more than 30 minutes, and then the active management is commonly implemented.
- Third stage active management is the administration of prophylactic oxytocin

and uterotonics like prostaglandins, clamping and cutting the cord, followed by controlled traction is applied.

Mechanism or movements of labour

It involves a series of passive movements as follows,

- Presenting part becomes engaged
- Descent of head
- Flexion of head
- Internal rotation of occiput
- Extension of head
- .Restitution
- Internal rotation of shoulder
- Lateral flexion of body
- Expulsion of fetus

ASSESSMENT DURING LABOUR

History collection and initial assessment

It includes a review of the mother's antenatal visits and care, including confirmation of the LMP (Last Menstrual Period) and EDD (Expected Date of Delivery). During history collection the following information to included,

- The time of onset of uterine contractions and it's frequency pattern
- Colour of amniotic fluid for presence of meconium or clear
- Monitor fetal movements
- Presence of undue bleeding per vagina

The true labour pain contractions differentiated from Braxton-Hicks contractions characteristics are as follows:

- It is irregular, Non -frequent in nature and occurs in few times a day.
- There is no correlation between the frequency and intensity of uterine contraction.
- It resolve with ambulation immediately or by change in the activity

The characteristics of true labour contractions as follows,

- At beginning contractions accelerate infrequently for every 10-15 minutes, then accelerate with increasing the number of contractions that occur for every 2-3 minutes.
- The true labour pain contractions lasting for more intense in longer time leads to dilatation of cervix.

Obstetrical Assessment

The obstetrical assessment includes the following information and to be included for documentation,

- Maternal vital signs during labour

  Fetal presentation at the time of admission

Fetal well-being by kick-chart

- Partograph monitoring for frequency of uterine contractions
- Abdominal assessment including Leopold maneuvers
- Pelvic assessment at the time of admission
- Digital assessment for cervical effacement and dilatation from 0-10 centimetres
- Cervical effacement to be recorded in percentage, the normal length 3- to 4cm
- Fetus position (posterior or anterior)
- Presenting part consistency (firm or soft)

Fetus station to be established with ischial spine with presenting part of the fetus that is ranging from (-5cm to +5 cm).

Management during intrapartum period

First phase of labour

Position the mother comfortably during the first phase.The common maternal positions are used in labour as following,

- Walking around the cot
- Supine position
- Sitting

Upright

- Standing with support
- Left lateral position

Management of first stage labour includes the following:

- Periodically monitor the strength and frequency of uterine contractions, cervical dilatation, fetus' station and position.
- For every 15 minutes the FHR (Fetal Heart Rate) to be monitored, specifically during and immediately after the uterine contractions, in labour room.

Second stage of labor

Every 5 minutes interval FHR to be monitored after each uterine contraction. If the second stage is prolonged, it indicates the labour arrest, need for expectant management like forceps, caesarean section or vacuum extraction.

Management during delivery of the fetus

Women should position in most comfortable manner during delivery. The positions adopted are,

- Supine position
- Sims position
- squatting position
- Knees and hands position

After the crowning of fetal head, surgical episiotomy need to perform,
The following manoeuvres practiced during in labour are,

- Hold the fetal head in middle position until it is delivered and followed by

oropharangeal suctioning to be done.

- Check for cord around the neck and try to reduce it gently if possible.
- The anterior shoulder of fetus is delivered through gentle downward traction with its head and chin.
- Subsequent upward pressure in the opposite direction facilitates the delivery of posterior shoulder.
- The body of the fetus now can be easily delivered with application of gentle traction away from the mother.
- Clamp the cord and cut.
- Vigorously stimulate the newborn and dry with sterile towel and put in on mother's abdomen.

Management during third stage of labor

The important sings of placental separation as follows,

- The uterus contracts strongly and rises
- Increases the lengthen of umbilical cord
- Vaginal flow like gush

After the delivery of baby, between 5-10 minutes interval, the placenta becomes expelled out. It is normal up to 30 minutes, if it exceeds more than that take an emergency action.

Drugs for pain control

The following agents can be administered in intermittent doses for systemic pain control,

- Every fourth hourly Morphine, 2-5 mg IM or IV

- Every hour Butorphanol, 1-2 mg IV or IM
- Every three hour Nalbuphine, 10 mg IV or IM

For an alternative, regional anaesthesia can be given. The options of anaesthesia include the following:

- Spinal
- Epidural
- Combined spinal and epidural.

During labour comfort measures that provide effective and natural pain relief. The various birthing techniques are birthing ball, hydrotherapy, sacral massage, hot and cold therapy, warm compress, breathing and relaxation techniques help to reduce the administration of analgesics during labour.[46]

The various comfort measures used during labour as follows,

Birthing ball

During labour a ball is comfortable for mother to relax and sit other than bed. The squatting position on the ball helps to descent the fetus and provides pelvic support. Mother can effectively use birthing ball, even after the ruptured of membranes and if the baby remains high station during active phase of labour. It is depend on midwifery nurse or care provider to educate about benefits of ball during delivery. If the baby stays remains "high," during active labour, the birthing ball may help to bring down into the pelvis. .

Benefits of birthing ball in labour as follows,

- Sitting on the birthing ball helps to keep the foetus properly aligned in maternal pelvis.

- The ball can encourage the pelvic mobility.
- Labouring women find it easier to get up and sit down from the ball than a ordinary chair or bed during labour.
- The birthing ball encourages the foetus to descend down further into the pelvis, this
- allowing the gravity to activate with the labouring mother.
- The ball may allow the labouring mother to shift her weight, help to rock her pelvis, and find more comfortable positions during labour.

Breathing technique

Breathing techniques during labour prevents discomforts and promote labour progression. It promotes to supply more oxygen to the foetus and mother.

Movement and Position Changes

Maternal movement and adopting different positions during labour helps in reduced pain level. Some women find minimum level of pain with different positions. Specifically primigravida mothers found most comfortable in upright positions like walking, or sitting Movements helps in good uterine contraction than sitting or lying down position. When labour advances may choose a lying down position. Movement during labour is very comfortable than staying in lying down can help for foetus to come down by fetal axis pressure. Also mother needs to be encouraged for sitting, standing, kneeling, lying down and walking.

Heat and Cold therapy

Heat therapy is most effective method for pain relief during labour. The methods inclusive of, hot water bottle, warm blankets or hot moist towels. A warm clothes on the perineum,

lower back or can be applied on whole area. The application of superficial cold methods are inclusive of ice-bag or a clothes immersed in ice water. These techniques may effectively reduce pain during labour. For every 30 minutes duration, the care giver can administer the cold or hot therapy for maximum effect.

Sacral-pressure

It is the pain control therapy with application of strong force on lower sacrum, during the uterine contractions, by using the palm of hand help to reduce the discomforts of pain among primigravida mothers during delivery.

Touch and Massage

The aim of therapeutic touch during labour is to communicate caring and reassurance to the labouring mother. A rthymic gentle stroke on rigid area is the best technique of psychological support, can promote good maternal outcome. A midwife administer a massage in mild, firm stroking on the parturient cheek can promote good maternal outcome. Massage during labour on other parts of body enhance caring. Massage administered in the form of mild firm stroking or rubbing over back, feet or hands and shoulders help to prevent pain perception during labour. During massage the painful stimuli from the uterine contractions blocked by brain receptors.

Aromatherapy

It is the method, using an completely necessary oils like rose, alma and camomile. Application of these essential oils during labour while massage or mixed with warm water for bath help to minimise the tension and stress during labor.

Hydrotherapy

Immersion in water or hydrotherapy during labour helps to provide emotionally soothing effect on the labouring women and helps to reduce the level of pain in labour. Now a days,

in foreign countries, all labour suits have a Jacuzzi tub used by labouring women. They used in the form of sitting on the shower stool or hand held form of shower massage. Most of the labouring women found comfortable with hydrotherapy. Advantage of this method may accelerate labour process, decrease the blood pressure, and increase the feeling of control over birth among labouring women.

Focus and Distraction

It is the relaxation technique used in labour for coping pain and distress and brings the ability to focus labour with mind diverting activities. Fear and anxiety during labour cause the release of stress hormones. Women can make ease these feelings by imagination of envisioning a pleasant scene. It helps the mother visualizing that what is actually happening such as the cervical dilatation or the foetus descent down. Focusing labour attention is a deliberate activity which can aided by verbal coaching, visualization, self-hypnosis, and concentration on a visual, auditory, or tactile stimulus.

Distraction is most passive form of focusing attention towards labour by using specific stimuli from the environment that divert attention away from labour pain.

Distraction and attention focusing are generally used for diversion from pains and aches in delivery.

The benefits of this techniques are helpful to reduce pain, fear, and anxiety.

Music therapy

It is one of the non- pharmacologic method used to control pain in labour. It helps to create good atmosphere, during child birth and relaxing effect to women during uterine contractions.

Music therapy creates a relaxing and pleasant environment in the labour room and the pleasant music transmitted through earphones and block out the distracting, disturbing an

unpleasant sounds. The care givers or midwife carefully chose music that help to reinforce to practice rhythmic breathing patterns, that facilitate focusing one's attention.

Childbirth is a very painful experience among laboring mothers. The level of pain perception experienced during labour is affected by physical, social, psychological and cultural factors. It is the complex stimuli from neurobehavioral allergenic response which promote a unique and personal experience to laboring mothers. The labour pain intensity greatly various from one to another women. The cause and effect relationship of pain labour does not always correlate with a clinical response to the mothers and it is important that midwives understand the pain level of primigravida mothers and to administer proper pain control methods.[8]

Most of the women prefer to use alternative therapies as the methods of pain relief during delivery. A Meta analysis of studies suggested that there are various alternative therapies available for pain relief which include, hot and cold packs, therapeutic touch, warm water baths, intradermal water injections, movement and

position changes, breathing exercise and massage. The other pain-relief methods are self-help techniques like relaxation and breathing technique during labour also found more effective.[5]

A women who trained in labour and gives continuous support during labour is known as doula. Presence of doula, in labour consistently reduces the use of analgesics. A report from Cochrane meta-analysis study was found that continuous support by doula significantly effective in reduction of operative vaginal deliveries, instrumental deliveries, cesarean sections and minimum requests for labour analgesia.[5]

The labour comfort strategies are very effective pain relief among primigravida mothers. The comfort techniques includes relaxation therapy, hydrotherapy, slowpaced breathing, audio-analgesia and visualization which promote the increased the secretion of essential endogenous that activate with brain receptors for pain relief. Other pain relief techniques include abdominal massage, music therapy and emptying the bladder can promote pain relief by preventing the use of anesthesia or analgesia or anesthesia during labour.[9]

Fetal occipital posterior position causes severe lower back pain perceived by women during labour. Administration of firm pressure or massage over lower back significantly reduces the labour pain. And also pain can be relieved by distraction or diversion involved with stimulation of other receptors. These can decrease the use of narcotic analgesia. A technique of 30 minutes massage at lower sacrum effectively reduces the delivery pain. [7]

During labour many mothers appreciate the technique of therapeutic touch and massage. Most often the touch and massage was provided by a midwives or care giver. The mothers received therapeutic touch in labour had significant reduction of maternal discomfort and stress. The therapeutic touch can be administered in the form of light hair stroking. This technique to be done by the use of hands, fingertips, or any other devices to stroke and apply pressure for control pain and promotes relaxation during labour.[7]

Prevention of labour pain or reduction of sufferings and aches are become major issue among obstetricians, and midwifery practitioners. The reviews undertaken from scientific articles catalogued in Non pharmacologic management of pain relief during labour. A scientific search of studies catalogued in PUBMED, AMED, CINAHL, and Cochrane Library, to measure the importance of various non-pharmacologic methods. A report from meta-analysis study shows that maternal movement and positioning, massage, warm baths, acupressure, continuous support and intradermal water blocks, hypnosis, TENS are helpful to reduce pain labour. And other techniques like aromatherapy, heat and cold packs are also helpful to reduce pain during labour. [10]

Majority of women use non pharmacologic approaches for managing pain during labour, with or without pharmacologic approaches. The non pharmacologic approach to pain reduction in labour includes a management includes a wide variety of techniques that address not only helps to control the physical sensations of pain, but also attempt to prevent suffering by promoting the psycho-emotional and spiritual components of care. In this approach labour pain is perceived as a normal accompaniment by many women.. The woman is educated for the use of non- pharmacological methods and support people to take an active role in decisionmaking and in using self-comforting techniques and alternative methods to relieve pain. The caregivers and support people can also help her by providing reassurance, guidance, encouragement, and unconditional acceptance of her coping style in labour. By taking an active role in decision-making and receiving appropriate support, the primigravida women are more likely to be able to transcend their labour pain and experience a sense of control, and well-being, factors associated with their ability to cope with labour.[11]

Movement and position changes during labour becomes most comfortable among primigravida women.Majority of primigravida women find upright positions like standing and walking most comfortable during first stage of labour.The advantages of upright positions are gravity effects and creates pressure on perineum which causes fetal decent

with progressive cervical dilatation. [12]

A Mental Health Update study was reported that continuous support by doula during labour promotes maternal comfort, positive emotional feelings and other health benefit to the foetus. A study was conducted on physical touch and emotional support among women concludes that 85% women used anesthesia, 70% of them had forceps delivery, 61% received oxytocin, 25% women had reduced duration of labour, and 585 not admitted to neonatal ICU. The result concluded that doula support during labour reduced perception of stress, anxiety, and pain. The partner support during labour also significantly reduces depression level, pain perception, anxiety level and distress, use of analgesia, and shorten the duration of labour, fewer perinatal complications and perceive more positive attitude. [4]

After the delivery of baby, the midwife implement the early initiation of breastfeeding which is vital in labour ward. Early breastfeeding promotes bonding between infants and mothers further it develops attachment and secure feeling. This bond is very essential for normal growth and development of newborn baby. Early breast feeding is very cheap method of providing an essential nourishment to the newborn whereas the later feeding causes lactation amenorrhea. The essential hormones are released from the mother's body and promotes the good maternal bonding with newborn. [13]

A comparative study was conducted to assess the effectiveness of breast crawl technique on prevention of hypothermia among newborns. Immediately after delivery the experimental group of normal, healthy, full term babies placed in breast crawl position on mother's chest, and the control group babies were lied on bed for few hours. Then the investigator compared the newborns body temperature between the groups. The study suggested that newborns in breast crawl position had significant improvement in skin and body temperature. The study concluded that earlier bonding promotes bonding between mother and newborn.[14]

The advantage of early breast feeding includes easily digestible, the antibodies in the breast milk protect the newborn from viral and bacterial infections. No other feeding can compensate the breast milk. It is the natural, non-chemical formulation, contains full of proteins, minerals, vitamins and other supplements. It is one of the essential complex nutrition and natural feeding to the newborn, helps to promote a healthy development of infant, childhood period and adult life.[13]

Epidemiology in Global scenario

There is a greater disparity in maternal mortality rate between developing and developed countries. In developed countries maternal mortality rate was 30% per 1,00,000 live births as per 1993 statistics whereas 450/1,00,000 live births in developing countries. In Southern Asia rate was 650/1 Lakh as compared to Eastern Asia 420/1 Lakh. The factors influencing for high rate of maternal mortality are poor socio economic status, delay in availability and accessibility of materials, transportation, lack of availability of maternity services.[14]

In the year 2004, the highest rate of maternal mortality was 147 per 100,000 live births , the morbidity and disability ratio is 32,000 to 1,00,000 live births in South Africa. This is due to complications from pregnancy and delivery. The essential

reasons for maternal mortality rate were puerperal infection, shock, amniotic fluid embolism, postpartum hemorrhage, infection, eclamptia and anesthesia effects. The reports from medical audits suggested that 80% of maternal mortality and morbidity are preventable, by providing the appropriate care during delivery. The morbidity rate in USA is estimated at 15 and 25 for every 100 live births. Most of the deaths occur due to complications during labour and delivery. These deaths could be preventable by strengthens the maternal health services.[15]

UN report shows that since 1990 the global maternal mortality rate reduced upto 45 percent, in the year 1990, the rate was 5.2 lakhs, and reduced to 2.89 lakhs in year 2013. During the period of 2013 the Sub-Saharan Africa poses highest ratio of 1.79 lakhs maternal deaths in 2013. India progressing noticeably in reduced up to 65% maternal deaths during the period 1990. The aim of Millennium Development Goal (MDG) is reducing MMR up to 75% during the year 2015.[16]

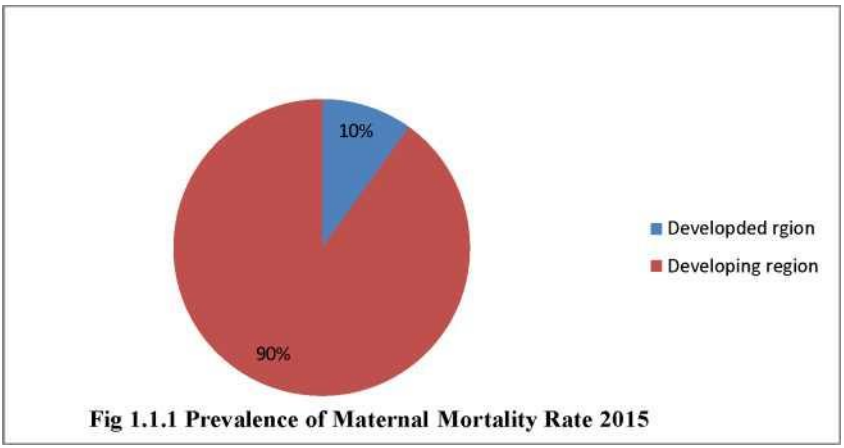

Fig 1.1.1 Prevalence of Maternal Mortality Rate 2015

The MMR rate is 25% in worldwide population, in the developed region, the ratio is less than 1%, and in developing countries ratio is up to 90%. Every ten minutes one maternal death occurs in India due to the serious complications of delivery. Totally 13% countries account for 67% of all maternal deaths. The highest Estimated numbers of maternal deaths

predicted in Pakistan, India, Angola, Nigeria, and Democratic republic of Tanzania Afghanistan, Bangladesh, China, Kenya and Indonesia **(WHO).**[17]

In developing countries an estimated ratio of 15% of maternal mortality due to complications associated with pregnancy and delivery, in that 530,000 maternal deaths predicted in every year worldwide annually with that the most 95% of these deaths occurring in Asian countries. The World Health Organization (WHO), reported that reproductive health problems account for more than one third of the total burden of diseases in women. Reducing maternal and infant mortality and morbidity rate has been one of the Millennium Development Goals (MDGs). Yet of all the health-related MDGs, there has been little improvement made towards these goals.[18]

The recognized priority concern across the globe is substantial reduction of maternal mortality. In 1994 the International Conference on Population and Development was conducted and recommended that reduction in maternal mortality rate by at least 50% maternal mortality rate reduced in the period of year 1990-2000. In the United Nations, the Millennium Development Goals (MDG) formulated the criteria to reduce the maternal mortality rate around 200 per lakh of live births population in the year 2007 and in 2015, the rate to be further reduced 109 per lakh of live births population.[18]

There are 40% of antenatal women suffering with obstetrical complications. In developing countries, it is a substantial burden to reduce maternal mortality rate. The World Health Organization (WHO) reported that in developing countries, there are 300 million women developing a long-term or short term complications during ante partum period and delivery. In the developing countries of India, the MMR rate was 214 in 1, 00,000 live births, (SRS). Most of these deaths occur during intrapartum period, immediate after delivery, and within 24 hours post-partum.

There are 800 women die every day globally, due to complications of pregnancy and delivery which are preventable. In that 20 per cent of maternal deaths from India. Annual

MMR report shows that in India 55,000 women die due to preventable pregnancy-related causes. In the year 2007, the maternal death ratio was 212 and 178 in the year 2012. UNICEF and its partners contributed to this reduction of MMR through scheme of JSSK. The aim of JSSK is to save and protect mothers from the lowest economic status brought substantial reduction of maternal mortality rate ,[20]

In the world, India constitutes for upto 17 % maternal death in the year 2013 or nearly 50,000 maternal deaths occurring. Nearing 2.89 lakh women were suffering in the year 2013. These maternal deaths due to the complications during pregnancy or labour. UN reported that Nigeria accounts for nearly 40,000 maternal deaths in the same period.[21]

In the year 1990, the maternal mortality rate was 560 per one lakh live births which further need to reduced up to 178 in 2010-2012, was the report given by the World Health Organization (WHO). To meet the MDG, the annual reduction of MMR is around 4.5 %,it should be reduced up to 5.5% ., India needs to reduce the rate of 103 per one lakh live births.

According to **UNICEF,** the maternal mortality rate in India was 450\l,00,000 live births in the year 1998-1999.This rate has to be reduced to 109 by the year 2015, to meet the Millennium Development Goal. Every year 78,000/1, 00, 0000 mothers die during child birth in India.

SAMPLE REGISTRATION SYSTEM (SRS) reported that the maternal mortality rate in Tamil Nadu from the year 2010-2012 were 90/1,00,000 live

births. From the year 2013-2014 maternal mortality rate were 68/1,00,000 live births. As per 2001 census, the population of Tamilnadu was 6.24 crores with dedicated growth rate of 11.7% which was the second lowest in the country next to Kerala. Tamilnadu was the sixth most populous state in India according for 6% of the country's total population. In Tamilnadu, as per government of India sample registration system 2002 furnished the birth rate to be 18.5/1000 population.

1.2 NEED AND SIGNIFICANCE OF THE STUDY

In the world labour pain is among the most severe and distressing among primigravida women. Severe pain during labour causes complications to the mother, foetus and also impair maternal status. This causes emotional and psychological disturbances to the maternal and child relationship. The distress during labour could be prevented by using comfort or alternative methods. In the year 2008, there are 84% women from America received alternative therapies during labour. These are time consuming during labour, but it is cost -effective and harmless to mother and foetus.[22]

Labour pain reduction and promotion of the normal delivery, highly influenced by modern Lamaze childbirth classes. This offer supportive teaching methods that how to cope with labour process, expectant mothers many ways to work with labour process including the various methods can be adopted to minimise the discomfort and pain.. Various techniques include are, position changes, mobility, ice pack, music therapy, birth ball techniques, audio analgesia, early skin-to-skin contact and breast crawl.

Slow - paced breathing exercise helps to reduces heart rate, anxiety and pain perception during labour. It works in vital among mothers because when

breathing becomes a focus, other sensations(labour pain) goes to the edge of awareness.

Conscious breathing during labour promotes relaxation, especially with combination of other different comfort techniques like relaxation exercise, music therapy enhance the mother in prevention of complications and distress and helps to promote uncomplicated delivery.

An experimental research was conducted among primigravida mothers to evaluate the effectiveness of video on patterned breathing during first stage labour in terms of level of pain perception and labour duration among primigravida mothers in tertiary care hospital. There were 40 primigravida mothers purposively selected, and randomly allocated 20 each in to experimental and control group of labour. The experimental group participants were shown the video on breathing exercises before the onset of labour .The performance of exercises during labour among primigravida mothers was assessed through the checklist. The pain perception score during first stage of labour was measured by numeric rating scale. The investigator assessed the first and second stage of labour by observational checklist. The assessment of pain level during in the latent, early active and late active phases of first stage of labour was showed statistical improvement difference among experimental and control group of primigravida mothers($p<0.01$). The result shows that the statistical significant difference ($p<0.01$) was found in the duration of first stage of labour with mean duration (8hours 48 minutes) in experimental group, where as in compared to control group(9hours 48 minutes).The mean duration of second stage of labour was also significantly less($p<0.01$) in experimental and control group of primigravida mothers. The study concluded that video teaching on practice of breathing exercises during labour help to reduce pain perception and duration first and second stage of primigravida mothers during labour.[23]

A prenatal education Journal reported that controlled and slow-paced breathing exercise promotes relaxation and reduces the level of pain perception. It is one of the best comfort

methods taught and demonstrated in Lamaze classes. In restricted labour room environment, breathing exercise only the non pharmacological comfort method available to mothers. Conscious breathing exercise and relaxation technique especially combination with other comfort methods, can help mothers to avoid unnecessary analgesics during labour and promote a mother have a safe and healthy birth.[24]

A research was conducted among primigravida mothers at hospital of Alzara, Tabriz. It was a quasi-experimental approach to assess the importance of slow-paced breathing exercise and sacral massage during labour. The researcher selected 82 primigravida mothers who fulfilling the inclusion criteria were the sample size. The experimental group of 40 primigravida mothers were received massage (M) and breathing (B) technique. The remaining of 42 primigravida women were grouped as massage 2 and breathing 2 randomly. The mothers from experimental group (breathing) implemented to practice slow-paced techniques during the cervical dilatation of 4 cm, 6 cm, 8 cm and 10 cm in first and second phase of delivery. A numerical rating pain intensity scale was used to assess the pain perception after 30 minutes of measurement of cervical dilatation. The maternal outcome were monitored with observational checklist at the interval of 30 minutes. The researcher applied massage technique to Massage 1 and Massage 2 groups with the same criteria of group one. Labour progression was monitored by the use of partograph. The report of the study concluded that massage during 4 and 6cm cervical dilatations and breathing technique reduces pain perception scores significantly.

The study revealed that administering the many techniques during labour reduces pain perception and decreasing the number of caesarean section.[22]

A quasi -experimental study conducted on “the effect of walking on pain during the active phase of labour”. Investigator selected 80 primigravida mothers from 37-42 weeks of gestational age, admitted for normal labour. The data was collected from the beginning of the active phase. The data was analyzed by using correlation coefficient. The study depicts

that mothers who walked (experimental group) around 1,624 meters distance had,average of five hours shorter in active phase than non-walked (control group).Also found significant reduction of pain perception among mothers.[25]

A cross sectional research of Pain perception among parturients in Enugu, Southeastern Nigeria was conducted. A total number of 250 questionnaires were administered, in that 181 were correctly filled by mothers and returned to a response rate of 72.4%. Pain level during labour was measured by numeric rating scale of 0 to 10.The scores interpreted that 0 representing no pain and 10 representing severe pain. A total number of 40 (22.1%) parturient mothers received some analgesics for relieving pain during labour whereas 141 (77.9%) did not receive. Other 141 mothers were not used analgesia and 79 (56.0%) mothers received analgesia, while 62 (44.0%) mothers would not. Of the 92 women received back massage by companions during labour, 67 (72.8%) mothers reported that this practice was helps to promote in relieving their pains in labour, while 25 (27.2%) mothers found useful. There was no significant correlation between labour pain scores and the mothers age and gestational weeks at delivery ($p > 0.05$). The study reported that, there was a significant positive correlation among mothers pain level scores and with their educational status ($r = 0.18$, $p = 0.018$) and found a significant negative correlation between mothers pain scores and parity ($r = -0.23$, $p = 0.009$), Also study suggested

that primigravida mothers mean value of pain score was high compared with multiparous mothers and grand multiparous. Mothers received massage therapy from the companion, significantly reduced pain perception compared with noncompanion groups. The study was concluded that mothers in Enugu, Eastern Nigeria, perceive that labour was a very painful process and implementing any non pharmacological methods during labour found to be effective. [26]

A randomized controlled trial conducted on effect of birth outcome on formalized approach care in hospital delivery assessment international units to determine the maternity care positively improve the normal spontaneous vaginal delivery and promote the quality of life among women and child. The study setting was in 20 North American hospitals and UK hospitals among 5002 nulliparous women who experiencing uterine contractions but not in process of active labour. 2501 mothers were received structured care and 2501 mothers were received to usual care. Usual nursing or midwifery care administered minimum of one hour by a nurse or midwife who trained in structured labour care. The primary outcome was normal spontaneous vaginal birth and other outcomes included based on intrapartum interventions. The women's views of maternity care and 51 indicators of maternal health and fetal health at hospital stay and follow-up 6-8 weeks after discharge. The outcome data was obtained from 4996 women. The data shows that the normal delivery birth rate was 64.0% (n=1597) in the experimental group and 61.3% (n=1533) in the routine care of control group. Only fewer women received a structured care (n=403, 19.5%) rated that nurses were allotted to provide usual care(n=544, 26.4%); rated that fewer women allocated to structured care(n=233, 11.3%) were disappointed with the amount of attention received from staff than those allocated to usual care (n=407, 19.7%). . This study suggested that structured nursing care in labour ward promotes high level of satisfaction among mothers, and increased the rate of normal vaginal deliveries. [27]

A clinical trial study conducted on breathing exercise in first stage labour in terms of

labour outcome among primigravida mothers. Forty eight primigravida mothers were selected randomly and allotted 24 mothers in intervention experimental) group and remaining 24 mothers in non-intervention (control) group. The experimental group mothers received breathing exercise during uterine contraction for 45 minutes interval of 3 times in the active phase of delivery. The control group received routine care . The investigator used Weber's pain scale to measure the pain level and behavioural check list to measure labour outcome. A significant improvement found in experimental group labour outcome and pain level than control group($p<0.001$ as per t- test).The study concluded that the breathing exercise is effective in controlling the intensity of labor pain in the first stage of labour. Hence breathing exercise could be used as a effective method to improve the quality of care during labour and delivery.[28]

This study was conducted to evaluate effectiveness of maternal-infant skin-to-skin contact among primiparous women during the first 2 hours post birth period compared to routine care (holding the infant swaddled in blankets) based on breastfeeding criteria outcomes through one month of follow-up. The healthy primiparous mother with infant were randomly selected to receive the skin-to-skin contact (n = 10) in experimental group. Control group mother with newborn received a standard care (n = 10). The investigator used the Infant Breastfeeding Assessment Tool to assess the breast feeding outcomes among newborn. Intervention dyads, experimental group experienced a mean duration of 1.66 hours of skin-to-skin contact. These infants, compared to control group swaddled infants, had higher mean sucking competency during the first breastfeeding (8.7 ±2.1 vs 6.3 ± 2.6; P< .02) and achieved effective breastfeeding behaviour sooner (935 ± 721 minutes vs 1737 ± 1001; P< .04). There was no significant differences were found in the number of breastfeeding problems arises during the follow-up (30.9 ± 5.51 vs 32.7 ± 5.84; P <

.25) or in breastfeeding exclusivity (1.50 ± 1.1 vs 2.10 ± 2.2; P< .45). Sucking competency of newborn was also related to mother's nipple protractility (r = .48; P < .03). The study

revealed that newborn in breast crawl position promotes successful breastfeeding ,[29]

WHO, UNICEF and WABA and other scientific international agencies strongly recommend that early initiation of breast feeding to newborn implemented immediately after birth or within half -hour of delivery. Implementing early initiation of breastfeeding can prevent 22% of neonatal deaths in developing regions. The breast crawl technique also reduces 1.3 million infant death annually.[30]

A Lamaze international journal reported that a newborn has the ability to move towards the mother's nipple and establishes suckling without help.. Baby crawling will help for the faster placenta expulsion therefore reducing blood loss and prevents anaemia, and helps for faster excretion of the maconium and this will help prevent jaundice, promotes bonding and successful breastfeeding relationship. The biggest advantage of breast crawl is to help to keep the baby warm, and the baby begins to getting colostrums which have good concentration of antibodies, and this method helps in protection against infections in newborn and promote for the baby's survival.[31]

Different women have different experiences of labour pain and although labour is considered one of the most painful human experiences, it varies from women to women and pregnancy to pregnancy. While some say that it resembles menstrual cramps , but the frequency of contractions that increases as the labour progress and gives less time to relax. While in labour, a women's response to touch therapy is different from one another. Maternity nurse understand the women's level of pain during labour and advantages of various techniques used during labour other than touch therapy. Apart from simply stroking, provide more support like counter pressure can be used during labour. These technique help in warm up uterine muscles, thereby reduce the lactic acid production and reduce labour pain. Changing birthing positions and movements during labour also promote pain relief. [32]

During labour, the pain impulses are blocked by tactile stimulation or stroking, increases

the transmission of larger diameter nerve fibres, this process is activated by “gate control theory” of cerebral cortex. Parturient mothers, attention-focusing or relaxation activities promote, coping ability during labour. A controlled ,conscious breathing during labour contractions ,make decreased perception of pain. During labour contractions the midwife can use light touch, make a mother creates aware of tense areas in her body ,[32]

During labour, primigravida mothers of 25- 65% suffering with severe lower back pain .In the early stages the pain level is slow down on progression, due to uterine contractions, fetal head decent, uterine ischemia and distension of the fetal head on cervix stretches the ligaments of the pelvic sacroiliac joints. These pain can be managed by taking a deep-slow-paced breathing through nose and breath out the same through mouth and repeated during and beginning of each uterine contraction to till it subside. [32]

Upright positions help to make contractions more efficient and keep rocking , and leaning forwards during contractions with massage on lower back help to relax all muscles .Other essential outcomes for upright and mobile positions for women during labour was included which based on the criteria of reduction in the number of caesarean section birth, use of minimum dose of epidural analgesics for pain control, and prevent the babies being admitted to the newborn ICU. Based on the results of this review author recommend that women should be encouraged and supported to use upright and mobile positions during first stage labour, as this may enhance the progress of their labour and may lead to good outcomes for mothers and their babies.

A study was conducted in International Bio-Medical Research, Pavoda, Italy, to compare the effectiveness of recumbent and alternative positions during the labour process based on the criteria of type of delivery, neonatal wellbeing and intrapartum fetal head decent progress. Totally there were 225 primiparous women with single cephalic foetuses were selected and divided in to two groups. Group A women spent more than 50% in recumbent position, where group B women were in alternative position. The study result found that

there was significant differences between these two groups in terms of maternal outcome during labour includes the labour length, Numeric rating pain score, number of analgesia request rate, mode of delivery, need of episiotomy and fetal head rotation. The study concluded that alternative positions during labour promote good maternal outcome and reduce pain level and help them to deliver the mothers in most comfortable position.[33]

A quantitative study conducted in University of Rajaraj eseswari Medical College, Bangalore to evaluate the effectiveness of sacral massage during first stage of labour among primigravida women. The research approach was quantitative approach of true experimental pre test post test design was implemented by the researcher. The sample size was 60 primigravida mothers selected by simple random sampling technique. The experimental group received 30 minutes sacral massage during uterine contractions of first stage labour. The control group received routine labour ward care. During the each phase of first stage labour the level of pain perception was assessed with numerical pain scale to both the experimental and control group. Results shows that experimental group significantly reduced level of pain during first stage of labour. This study revealed that sacral massage during active first stage of labour were effective intervention for reducing labour pain.[34]

A quantitative research study conducted in Nitt University Journal of health science, The aim of the study was to evaluate the effectiveness of massage therapy on labour pain among primigravida mothers during first stage of labour. The sample size was 40 primigravida women .A research design selected was true experimental approach with pre-test -post-test control group design. The demographic data were collected from the women by interview method. The visual analogue scale was used to assess the level of pain perception in labour both the experimental and control groups .Statistical data analysis was done with inferential statistics and descriptive methods.The results shows that there was a significant difference found in experimental group(t-9.869, $p<0.05$) than control group. The pre test score was (t-0.36 $p>0.05$) and the post test score was (t-11.75

p<0.05).There was no significant association was found between primigravida mothers level of labour pain and selected demographic variables in the experimental group. The study concluded that massage during labour reduce the pain perception in first stage labour.[35]

A cross-sectional study conducted on Mother and Infant Early emotional Ties. The study reported that recent behavioural and physiologic responses of newborn and mothers have shown that the newborn became ready to begin interacting with outer world in the first minutes of life. The findings of the study suggested that the newborn's ability to crawl toward the mother's breast and start to initiate sucking promotes skin-to-skin contact and newborn thermoregulation. The attachment of the mother and newborn bonding biochemically modulated through hormone oxytocin which helps in encouraging attachment of newborn through early contact. The early suckling, and rooming in are become vitals in labour room to reduce abandment.[36]

A Descriptive Cross-Sectional study was conducted on breast feeding practices and its impact in labour room among primigravida women . To implement the earlier breastfeeding among infant it should be alert, has the sucking, swallowing ability and the mother should be willing to feed their newborn.The biological environment and surroundings also support the infant to initiate breastfeeding feeding through breast crawl immediately after delivery.[37]

A randomized trial conducted to assess the effectiveness of massage therapy on reduced the severity of pain perception during labour among primigravida mothers in Tahera university, Bhopal. There were 46 pregnant women above 37 weeks gestation with single fetus were selected as sample. The inclusion criteria determined that labour occurs in spontaneous onset, active latent phase from 4-5cm of cervical dilatation and presence of ovular membranes, and no use of medication after admission to hospital. The intervention (experimental) group of mothers implemented with a 30 -minutes massage on sacrum

during the active phase of labour whereas the control group received routine labour ward care. But both the groups received routine perinatal care. The primary maternal outcome was pain severity which was measured with a 100 mm of modified visual analogue scale. The results shows that the level of pain severity was assessed in the experimental group score was 52mm(SD 20) and in the control group score was 72 mm(SD 15).There was a statistically significant difference with a mean score difference of 20 mm. The study concluded that the massage therapy had reduced the severity of pain in active phase of labour.[38]

Paediatric clinics of North America, states that the fundamental importance of breastfeeding to the health and wellbeing of mothers and infants worldwide is accepted widely. As noted by the American Academy of Paediatrics in its 1997, policy statement, human milk is the gold standard nutrient for healthy ,term newborn infants and in most cases, should be the only nutrient provided through approximately the first 6 months of life. A growing accumulation of studies shows that breastfeed infants have fewer episodes of gastrointestinal disease, respiratory disease, acute otitis media and urinary tract infections and are at lower risk for several important chronic conditions, including crohn's diseases, ulcerative colitis, lymphoma, leukemia, and insulin dependent diabetes mellitus.[39]

A study was conducted in USA, among primigravida mothers during labour to assess the effectiveness of massage therapy on pain perception. The experimental group of mothers alone received massage during labour. The massage group showing a less depressed mood, mild level of pain perception, reduced level of stress and anxiety and having positive facial expressions. There are various techniques used to relieve pain during labour includes massage therapy which was effectively activates to promote relief from pain ,peeling and decreasing the level of fear.. The stimulation of hormone endorphin release in the blood circulation enhance with increased oxygen supply to the uterine tissues, and helps in toxin excretion through the lymphatic system. In addition during labour a

proposed mechanism activates by the noxious stimuli evoked by lesions which are regulated through the spinal cord by nerve cells and it act as gate control in preventing or inhibiting the passage of pain impulses to the brain.[40]

A clinical trial study conducted among primi parturient on massage therapy during the active phase of labour. The study revealed that a gradual decrease in level of anxiety and lower level pain perception in latent, active and transitional phases of labour in the intervention group. And also help to reduce fear and stress

during active phase of labour and observation was made by using a modified a visual analogue scale.[41]

UNICEFF, WHO, WABA (World Association on Breast feeding Alliance and BPNI (Breast Feeding Promotion Network of India) strongly recommend about initial breast feeding within half an hour of birth. Initiation within half an hour prevent 2% of neonatal and infants in developing region. This method influence the several advantages to the mother and baby as follows, prevents hypothermia by breast crawl position, achieves effective feeding skills faster so chances of long term breast feeding success increase, baby gets early protection from infections from colostrums(initial milk secretions which high concentration of antibodies and other anti-infective properties) as the first feed.[42]

The investigator experienced that the primigravida mothers perceive severe pain, develops discomfort and various complications during labour. They are not seeking any non pharmacological therapies. So the investigator was developed that selected nursing interventions which are cost effective and has no side effects, but also reduce the use of pharmacotherapy, reduce the duration of labour, and prevent complications during labour. This further promotes good maternal and newborn outcome.

1.3 STATEMENT OF THE PROBLEM

EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA
MOTHERS AT SELECTED HOSPITALS ,TAMIL NADU

1.4 OBJECTIVES

- To assess the maternal and newborn outcome in experimental and control group among primigravida mothers.
- To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among experimental and control group of primigravida

mothers.

- To find out the association between post test scores on maternal outcome among experimental and control group of primigravida mothers with their selected demographic variables.

- To find out the association between post test scores on newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

1.5 OPERATIONAL DEFINITIONS

1.5.1 Effectiveness

It refers to improvement in maternal and newborn outcome, as described by significant difference between post test scores of experimental group and control group among primigravida mothers.

1.5.2 Selected nursing intervention

The selected nursing interventions are, slow-paced breathing exercise, sacral massage, position changes and early initiation of breast feeding through breast crawl during labour among primigravida mothers.

1.5.3 Slow-paced breathing exercise

The technique of breathing exercise involves breath in through nose, in a deep, slow manner for 5 seconds, and breath out through mouth in the same slow deep way for 5 seconds, totally 6-9 breaths per minute for every one hour which is demonstrated by investigator to the primigravida mothers from 37 weeks to 42 weeks of gestational age and instructed to practice the same exercise to be continued throughout pregnancy and from the onset of true labour to till the end of first stage of labour, during the uterine contractions , in the labour ward.

1.5.4 Sacral massage

Position the primigravida mothers in left lateral at the beginning of the latent phase of labour (cervical dilatation 0-4cm) A firm massage given by investigator in lower thoracic to sacrococygeal region(T10 and S4) which corresponds to the path of the hypo gastric plexus and the pudendal nerve responsible for innervations of the paravertebral ganglia, delivery canal and perineum.

The technique of massage which involves in a rhythmic, ascending, kneading hand movements with sacral pressure for 10-15 minutes in everyone hour till the end of first stage labour during uterine contractions.

1.5.5 Positions

After 10 minutes from the completion of sacral massage , position the primigravida mothers in left lateral to upright (sitting(or) standing with support) changed alternatively for 20-30 minutes in every one hour till the end of first stage labour.

1.5.6 Breast crawl

After the delivery of baby and cutting the cord, if the status of baby is good colour , active , and appears normal, dry the head and back, and put immediately on the mother's abdomen. The newborn eyes at nipple level and nose in the middle of the mothers chest and and allowed to attach spontaneously to the breast and to continue for 40-45 minutes, till the completion of first breast feed. Gently assist the baby while taking feed.

Mother and baby at that time covered with thin sheet. After the first breast feed , baby was taken to warmer for cord care, eye care, and various routine procedures.

1.5.7 Maternal and newborn outcome

It refers to significant improvement in health status of primigravida mothers and newborn during labour.

The maternal outcome includes pain perception during labour, duration of labour, cervical dilatation, uterine contractions, colour of amniotic fluid, fetal heart rate, fetal movements, presence of episiotomy, perineal tear, maternal fatigue, blood loss in labour, mode of delivery, separation of placenta, bladder and bowel pattern, involution of uterus, vital signs and conscious status.

The newborn outcome includes Apgar score, temperature, birth weight, comfort, quality of breast attachment, frequency of feeding, and presence of meconium stain.

1.5.8 Pain perception

It refers to the level of pain perception experienced by primigravida mothers during latent, active and transitional phase of labour after the selected nursing interventions, which is measured by visual analogue pain scale.

1.6 HYPOTHESES

Level of significance at 0.05

RHi: There is a significant difference in maternal outcome among primigravida mothers between experimental and control group.

RH2: There is a significant difference in newborn outcome among primigravida mothers between experimental and control group.

RH3: There is a significant association between post test scores of maternal outcome in experimental and control group among primigravida mothers with their selected demographic variables.

RH4: There is a significant association between post test scores of newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

1.7 ASSUMPTION

The study assumes that,

1. Labour pain is distressing for all primigravida mothers.
2. The selected nursing interventions of slow-paced breathing exercise, sacral massage, position changes and breast crawl has an impact to promote good maternal and newborn outcome during labour.
3. Primigravida mothers require non-pharmacological therapy to maintain quality of life.

1.8 DELIMITATIONS

The study was limited to,

- Primigravida mothers from 37 to 42 weeks of gestation.
- Primigravida mothers attending outpatient department in Annai Theresa Hospital, Medavakkam, Chennai and Narayana Hospital, Purasawalkam, Chennai.
- Evaluating the effectiveness of selected nursing intervention on maternal and newborn outcome.

The study was limited to 231 primigravida mothers.

1.9 CONCEPTUAL FRAMEWORK

It is based on theoretical approach, to solve the research problems on scientific methods which emphasizes the organisation, selection, and clarification of steps and concepts. It describes the functional relationship, not based on the statistical approach.

19.1 Conceptual framework based on Ernesstine wieden bach's helping art of clinical nursing theory for the present study

Theoretical framework provides clear description of variables suggesting ways or

methods to conduct the study and guiding the interpretation, evaluation and integration of study findings.[43]

A theoretical framework can be defined as set of concepts and assumptions that integrates them into meaningful configuration.[44]

This study is based on Ernesstine Wieden Bach's helping art of clinical nursing theory which would be relevant to improve maternal and newborn outcome by providing selected nursing interventions ie slow-paced breathing exercise, sacral massage , position changes and early initiation of breastfeeding through breast crawl technique to the primigravida mothers from 37-42 weeks of gestational age.

Ernesstine Wieden Bach's Helping Art of clinical nursing theory proposes a prescriptive theory for nursing, which is described as a conceiving of a desired situation and the ways to attain it. It directs action toward an explicit goal. It consists of three main factors ,central purpose, prescription, and realities.

1. **Central purpose**

It refers to the state of accomplishment (or) it is the overall goal towards desired strives.

2. **Prescription**

It is the planning phase, describes the method of care given to the patient to meet the objective or desired action.

3. **Realities**

It involves the desired care based on individual clients physiological, cultural, social, and psychological factors.

Agent:

Agent is the midwife who has knowledge, and skill to administer proper care to the clients

to achieve goal.

Recipient:

It refers to patient who has personal attributes, and problems, and one who receives a nurses action.

Goal:

It is the nurse's planned outcome or evaluation to bring improvement.

Means:

It is the nurse's performance or intervention to meet goal.

Framework:

It refers to the setting where the care is administered, it comprises of human, environmental, professional, and organizational aspects of care.

The steps of nursing care as follows,

Step-1: Identifying the need for help

It refers to the nurses ability to perceive the problem of an individual client.

Step-2: Ministering the needed help

It is the administration of desired care to patient who wants help.

Step-3: Validating the need for help

It is the method of evaluation to measure the improvement after care.

1.9.2 Application of conceptual framework based on Ernesstine wieden bach's helping art of clinical nursing theory for the present study

The main concepts in Ernesstine Wieden Bach's helping art theory are:

Central purpose

In this study, the researcher evaluates the effectiveness of selected nursing interventions of slow-paced breathing exercise, sacral massage, position changes and breast crawl technique on improving good maternal and newborn outcome among primigravida mothers during labour.

Identifying the need for help

In this study researcher identified the primigravida mothers from 37-42 weeks of gestation who had severe level of pain perception and distress during labour. Based on the inclusion criteria samples were selected, simple random method was adopted to select the samples. Demographic variables including age, religion, education, occupation ,income, family type , living area, antenatal check up, gestational weeks and history of dysmenorrhoea.

Ministering the needed help

The researcher perceived, developed and implemented the selected nursing interventions includes slow-paced breathing exercise ,6-9 breaths/minute for every one hour till the end of first stage labour ,sacral massage ,10-15 minutes/hour for every one hour till the end of first stage labour, position changes for 20-30 minutes in every one hour during uterine contractions. The breast crawl technique was implemented immediately after the delivery of newborn. This step involves the following components,

Agent:

The researcher acts as an agent to render the needed help to the primigravida mothers.

Recipient:

The primigravida mothers from 37-42 weeks of gestation

Goal:

The goal was to reduce the pain perception during labor and to promote good maternal and newborn outcome.

Means:

The selected nursing interventions of slow-paced breathing exercise, sacral massage, position changes and breast crawl technique.

Framework:

It denotes the labour room where the selected nursing interventions had implemented.

Validating the need for help

The researcher validates the needed help among primigravida mothers to reduce pain perception, and promotes good maternal and newborn outcome. Post test was conducted by using visual analogue scale, observation check list and Apgar score chart to evaluate the maternal and newborn outcome among experimental and control group primigravida mothers. The goal was achieved when there was a reduction in the level of pain perception and good maternal and newborn outcome in experimental group. The investigator had made suitable decision and recommendations to continue, withdraw or modify nursing intervention proposed for reducing the pain perception, to achieve the maternal and newborn outcome.

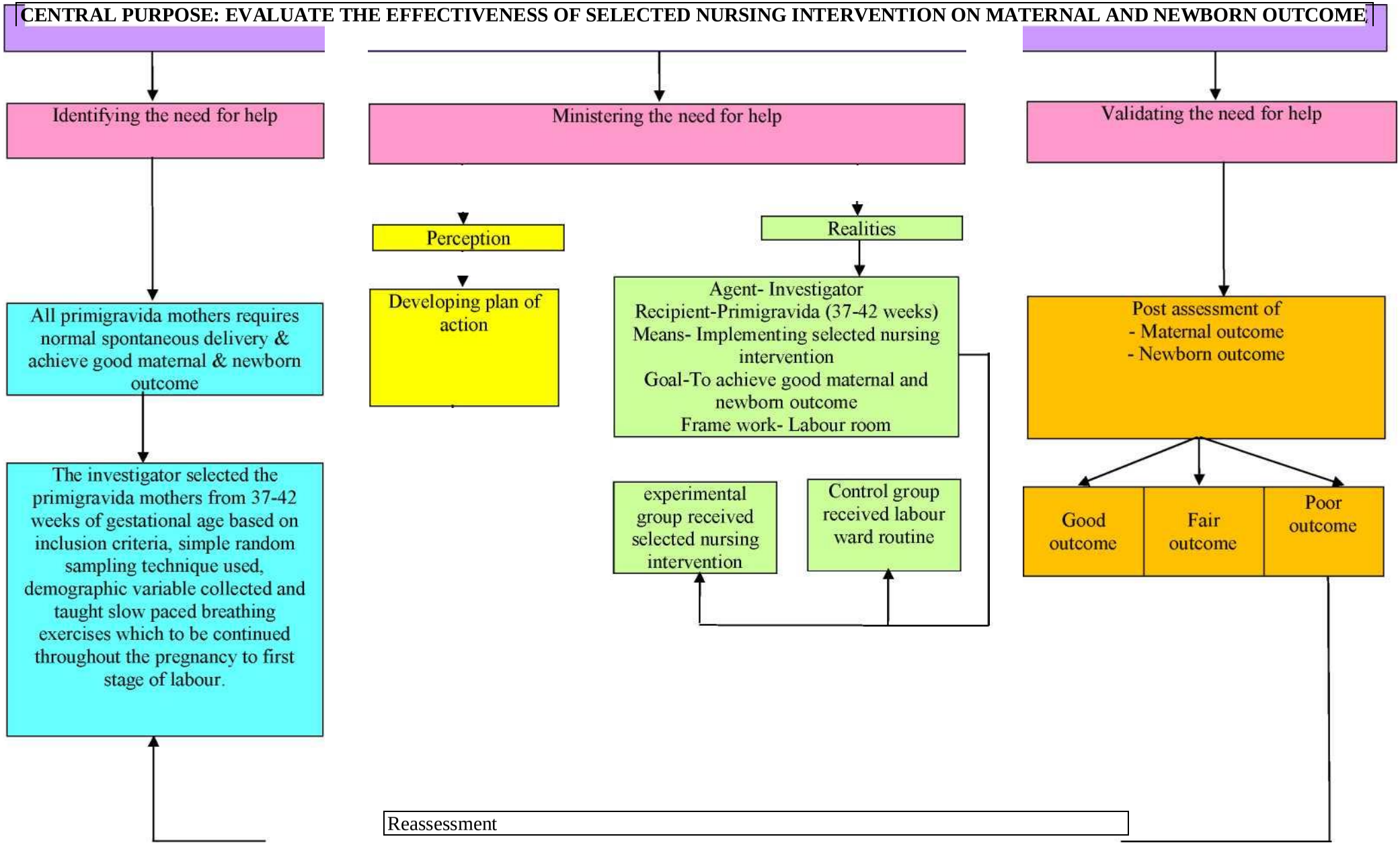

Fig.1.1.2 Modified Conceptual frame work based on widenbach's helping Art clinical Nursing Theory (1964)

SUMMARY

This chapter has dealt with Introduction, need for the study and statement of the problem, objective, operational definitions, hypothesis, delimitation and conceptual framework of the study.

OUTLINE OF THE REPORT

It describes the further aspects of the chapters as follows,

Chapter II: Literatures related to present study

Chapter III: Review Methodology which includes research approach, research design, setting of the study, population, sample size and sampling technique, tools description, reliability and validity of tools, development of selected nursing intervention, pilot study report, procedure for data collection, and plan for analysis of data.

Chapter IV: Data analysis and interpretation

Chapter V: Discussion

Chapter VI: Summary, conclusion, nursing implications, recommendations and limitations of the study.

The report ends with bibliography and Appendices

CHAPTER -II

REVIEW OF LITERATURE

Conduction of research is based on thorough undertaking of review of literature which familiarizes the researcher themselves with the knowledge base. The most important of research literature review is written part of summary on state of evidence related to research problem.[46]

Review of literature serves as essential background for any researcher for understanding current knowledge of the topic, eliminate the significance of new study, formulating and delimit the problem, suggesting a theoretical framework to choose most appropriate design for the study, throws light on the flexibility and reveals constraints of data collection.[100]

The major steps of preparing a written research review includes formulating a research question, conducting a search through relevant resource of abstracts retrieving , and encoding the information , analyzing the organizing information and critiquing the studies, and involves written summary preparation. The review of literature related to present study were from, books, journals, unbound Medline data , and published articles search to broaden the understanding and gain the insight into the selected question (or) problem under study.

2. Review literature on studies related to

2.1 Review related to studies on Non - pharmacological and complimentary therapies in labour

2.2 Review related to studies on slow-paced breathing exercise in labour

2.3 Review related to studies on sacral massage in labour

2.4 Review related to studies on position changes in labour

2.5 Review related to studies on early initiation of breast feeding through breast crawl.

2.1 Review related to studies on Non - pharmacological and complimentary therapies in labour.

The control of labor pain and prevention of suffering are major concerns of clinicians and their clients. Non pharmacologic approaches toward these goals are consistent with midwifery management and the choices of many women. We undertook a literature search of scientific articles catalogued in CINAHL, PUBMED, the Cochrane Library, and AMED databases relating to the effectiveness of 13 non- pharmacologic methods used to relieve pain and reduce suffering in labor. Suffering, which is different from pain, is not an outcome that is usually measured after childbirth. We assumed that suffering is unlikely if indicators of satisfaction were positive after childbirth. Adequate evidence of benefit in reducing pain exists for continuous labor support, baths, intradermal water blocks, and maternal movement and positioning. Acupuncture, massage, transcutaneous electrical nerve stimulation, and hypnosis are promising, but they require further study. The effectiveness of childbirth education, relaxation and breathing, heat and cold, acupressure, hypnosis, aromatherapy, music, and audio analgesia are either inadequately studied or findings are too variable to draw conclusions on effectiveness. All the methods studied had evidence of widespread satisfaction among a majority of users.[47]

A randomized controlled trial conducted in two public hospitals ,Sidney, Australia among nulliparous women. The aim of the study was to measure the effectiveness of antenatal integrative medicine education programme with usual care and intrapartum epidural use. The investigator includes 176 primigravida mothers

during 24-36 weeks of gestation based on the inclusion criteria of normal, healthy and without having obstetrical complications and attending outpatient department. The investigator provided the instructions about alternative therapies in labour outcome like acupressure, massage, breathing exercise, yoga therapy etc and all participants have instructed to attend the antenatal education programme for two days. The experimental therapy group scores were (23.9%) standard care (68.7%; risk ratio (RR) 0.37 (95% CI 0.25 to 0.55), p<0.001). The experimental group mothers reported a reduced rate of augmentation during labour (RR=0.54 (95% CI 0.38 to 0.77), p<0.0001). .The study revealed that the alternative therapies during labour and birth study protocol were significantly reduced the caesarean section rate and epidural use among primigravida mothers in labour. [48]

A study was conducted to analyse the effectiveness on alternative approaches and complementary therapies towards labour pain perception including perinatal and maternal morbidity. The data collected from the Cochrane Pregnancy and Childbirth Group trials register (July 2002), the Cochrane Controlled Trials Register (The Cochrane Library Issue 2, 2002), MEDLINE (1966 to July 2002), EMBASE (1980 to July 2002) and CINAHL (1980 to July 2002).The inclusion criteria were published and unpublished randomised controlled trials comparing complementary and alternative therapies with placebo, no treatment or pharmacological forms of pain management in labour. All women whether primiparous or multiparous, and in spontaneous or induced labour, in the first and second stage of labour were included. Meta-analysis was performed using relative risks for dichotomous outcomes and weighted mean differences for continuous outcomes. The outcome measures were maternal satisfaction, use of pharmacological pain relief and maternal and neonatal adverse outcomes. There are Seven trials involving 366 women and using different modalities of pain management were included in this review. The trials included one involving acupuncture (n = 100), one involving audio-analgesia (n = 25), one involving aromatherapy (n = 22), three trials of hypnosis (n = 189) and one trial of

music (n = 30). The trial of acupuncture decreased the need for pain relief (relative risk (RR) 0.56, 95% confidence interval (CI) 0.39 to 0.81). Women receiving hypnosis were more satisfied with their pain management in labour compared with controls (RR 2.33, 95% CI 1.55 to 4.71). No differences were seen for women receiving aromatherapy, music or audio analgesia. Acupuncture and hypnosis may be beneficial for the management of pain during labour.[49]

A cross sectional study was conducted among the maternity nurses towards a knowledge of training on complementary alternative therapies in labour ward. A researcher used quantitative descriptive approaches for conduction of study. The setting was 28 government hospitals in Spain and Catalonia. The study revealed that just under a third of midwives (30.4%) trained in CAT after completion of basic training. They trained in an average of 5.97 therapies (SD 3.56). The number of CAT in which the midwives were trained correlated negatively with age ($r = -0.284$; $p < 0.001$) and with their time working at the hospital in years ($r = -0.136$; $p = 0.036$). Midwives trained in CAT considered that the following therapies were useful or very useful for pain relief during labor and delivery: relaxation techniques (64.3%), hydrotherapy (84.8%) and the application of compresses to the perineum (75.9%). The availability of resources for providing CAT during normal birth care varied widely from centre to centre. It is important to increase the number of midwives trained in CAM for pain relief during childbirth, in order to promote the use of CAT and ensure efficiency and safety. CAT resources at accredited hospitals providing normal childbirth care should also be standardized. The study concluded that, it is important to administer the coaching classes for CAT for nurses working in the specific maternity hospitals.[50]

A survey research was conducted to assess the importance advantages, and cost effectiveness of the five comfort measures during labour among women in North America to improve obstetric outcome during labour. There are five comfort measures selected for review. The investigator systematically collected and organized the reviews for further

evaluation based on established criteria with structured standard tools .And evaluated with prospective controlled studies and with the institutional support(skills, polices, and equipment). The five comfort measures including continuous labour support, baths, touch, massage, maternal movement and positioning for pain relief during labour. After the extensive search of data bases, the investigator found that there is a high level of possibility for implementation of comfort measures in various clinical areas. The study concluded that comfort measures during labour helped in reduce the level of pain , anxiety and fear and they are effectively safe and cost effective.[51]

A study conducted on non pharmacological methods of labour pain reduction and maternal and neonatal outcomes. The information collected from Embassy, MRCT, CINAHL and the MEDLINE databases were collected from the year January 1990 to December 2012.Based on the Cochrane criteria, the investigator compared the randomized controlled trials of non-pharmacologic approaches towards labour pain perception with routine care. The non pharmacologic approaches, based on Gate Control (positions, mobility, sacral massage, hydrotherapy) and Diffuse Noxious Inhibitory Control (acupuncture, acupressure, transcutaneous electrical stimulation, sterile water injections), are highly associated with a reduced use of epidural analgesia and a improved women's satisfaction during labour. All non- pharmacologic approaches based on Central Nervous System Control (education, attention deviation, support) and the routine care is highly associated with increased odds of epidural OR 1.13 (95% CI 1.05-1.23), caesarean births OR 1.60 (95% CI 1.18-2.18), forceps or vaccum delivery OR 1.21 (95% CI 1.03-1.44), use of

oxytocin OR 1.20 (95% CI 1.01-1.43), labor duration (29.7 min, 95% CI 4.5-54.8), and a lesser satisfaction with childbirth. The study concluded that non pharmacologic methods of continuous support, during labour was most effective in reducing obstetric interventions. These methods helps to reduce pain perception, improve the health of mother and newborn and provide significant benefits to women and their infants without causing additional harm.[52]

2.2 Review related to studies on slow-paced breathing exercise in labour

A controlled clinical trial was carried out in obstetric clinics of zoysa maternity hospital, Iran. The aim of this study was to identify whether breathing and relaxation exercise are effective in relieving the pain, increasing the feeling of control of the parturients and reducing the analgesic requirement during labour. The study population was primigravida mothers who were after their 32 weeks of gestation. Selection of samples done by based on inclusion and exclusion criteria, and the subjects grouped into interventional(24 mothers, experimental) and non interventional (30 mothers, control) groups.). The experimental group received education on relaxation & breathing exercises were taught for three days and one class was scheduled for 45 minutes for each person. As outcome measurement tools, VAS and LAS were used and also finding out the analgesic requirement of the parturient during labour. Within 24 hours after labour, LAS questionnaire & value for the VAS were taken from subjects. Collected data was analysed by using SPSS with computer software. Independent sample t-test was used to asses any significant different between mean values of the main variables in two groups. The study revealed that statistically significant difference found between experimental and control groups regarding the VAS, LAS score & analgesic requirement, (significance value; VAS=0.000, LAS=0.000, analgesic requirements.045). The study concluded

that relaxation & breathing exercises are effective in relieving the intensity of pain feeling of self control and reducing the analgesic requirement during labour.[53]

A randomized trial study was carried at fatemieh hospital in shahroud, among two groups of 60 labouring mothers, the experimental group (n=30) received breathing technique alone ie a deep breath was taken and exhaled during the contractions, with inhale the lavender essence. In the control group only the breathing technique was used. T-Test was used to compare the mean length of active phase and 2nd phase of labour, and demographic variable. The results showed that the length of duration is decreased in the active first stage of labour in the experimental group compared to the control group (p=0.04). (7.85 +3.85 hours and 9.88+6.65 hours). The length of labour during the second stage was 16.5 +5.7 and 28.9+17.4 minutes in experimental and control group. It shows that difference in length of labour was significant (p=0.001).The study concluded that aromatherapy can be used along with breathing technique to reduce labour duration.[54]

A quasi-experimental study was conducted in labour room at Babylon teaching hospitals among primigravida mothers. The aim of the study was to measure the level of pain on breathing exercise among primigravida mothers in the first stage labour. The three types of breathing exercises were taught and practiced by mothers during first stage of labour. Visual analogue scale was used to assess the level of pain at every 30 minutes interval. The study results shows that level of pain perception score was significantly reduced on deep breathing group was (2.82+0.60) which is the lower than control group(3.20)(p=0.001). The study suggested that breathing exercise during labour significantly reduced level of pain perception among experimental group of primigravida mothers.[55]

An experimental study was conducted among 48 primigravida mothers in California hospital. This study was conducted to evaluate the effectiveness of deep breathing exercise on reduction of pain perception during the first stage of labour . The primigravida

mothers were divided randomly into intervention therapy(24 mothers, experimental) and non intervention group (24 mothers, control) , where the intervention group administered patterned breathing at a number of 20 breaths for 45 minutes interval of 3 times during first phase of labour. After the intervention the pain perception level was measured with Weber's pain scale and behavioural checklist during the each uterine contraction. Null hypothesis is rejected at 0.005 level of significance ($p<0.001$). The study concluded that breathing exercises is significantly effective in reduction of labour pain in the first stage of labour. So the breathing exercise could be implemented in hospitals in order to improve the quality of care in labour.[56]

A true experimental study was conducted among 60 primigravida mothers in antenatal ward and labour room of selected hospitals in Madurai. The objective of the study was to assess the effectiveness of slow-paced breathing on pain and behavioural responses during active phase of labour. Pre-test and post-test design was used and purposive sampling method was adopted for selection of samples. The investigator obtained permission from concerned authority and informed consent was taken from subjects. The subjects were grouped into experimental which includes 30 mothers and control includes 30 mothers. Initially subjects were interviewed in order to obtain demographic data. After that level of pain assessed with modified numeric pain intensity scale and behavioural responses by using observational check list both in experimental and control group. Experimental group taught to practice slow-paced breathing exercise to do while contractions begins till contraction subside. There are four observations including pre-test was made to assess the pain and behavioural responses with the interval of one hour both in control and experimental group. The results showed that the post test scores of level of pain and behavioural responses significantly higher ($p>0.005$) than in control group. The study concluded that slow-paced breathing practice during active phase of labour reduce labour pain and improve good behavioural responses. [57]

A quasi-experimental study was conducted among 40 primigravida mothers admitted in

tertiary care hospital, India. The aim of the research study was to evaluate the effectiveness of video teaching on breathing exercise on reduction of pain perception and labour duration . Researcher selected 40 primigravida women, randomly allotted 20 each into experimental group and control group. The experimental group mothers shown a video on 'breathing exercises before the onset of labour and performance of exercises during labour was assessed through the checklist. The numeric pain rating scale was used to assess the pain level during delivery. The first stage and second stage labour lengths measured by observational checklist. The results revealed that the level of pain perception in the latent phase and active phases of labour duration reduced significantly($p<0.001$) in experimental group than control group and also shorter the duration in first and second stage labour in experimental group than control group. The results concluded that effectiveness of video teaching on breathing exercise in labour on level of pain perception and duration of labour towards primigravida mothers were significantly effective in tertiary care hospitals.[23]

A study was conducted among primigravida mothers admitted to the SSK Bakirkoy Women and Children's Hospital in Istanbul, Turkey between the period of January 1 to September 2011.The aim of the study was to determine the effect of breathing techniques and nurse -administered massage on the pain perception of primigravida mothers during labour. The mothers from 38-42 weeks of gestational age were selected based on the inclusion criteria without high risk and expected to have normal vaginal delivery by the method of simple random sampling. A total number of 40 cases selected in which 20 in the experimental group and 20 in control group. Data were collected through the visual analogue scale, inspection form, observational form and postnatal interview form. The researcher provided information about labour, breathing techniques and massage to the primigravida women assigned to the experimental group at the beginning of latent phase of labour and study researcher also accompanied them during labour. These women received nurse-administered massage and were encouraged to breathe and perform self-

administered massage. Mothers were also encouraged to change their positions and relax. The study results concluded that nursing support and patient-directed education concerning labour and non pharmacological pain relief methods (eg.breathing ,and cutaneous stimulation techniques) were effective in reducing the level of pain perception by the primigravida mothers(when provided in the latent phase labour before delivery).[58]

A double-blind clinical trial research was conducted among primigravida mothers on effectiveness of breathing techniques on duration of active phase of labour and its second stage. There were totally 60 primigravida mothers selected by simple random sampling technique. A formal written consent obtained before data collection and the subjects were introduced into the study. The breathing technique during active phase of labour for experimental group was including deep breathing at the beginning of contractions following with quick and short breathing at a rate of 1/5 times more than the normal breathing pattern per minute. The control group did not receive any other intervention. The study results were analyzed by t-test and chi-square test and the data have analyzed by SPSS software. The findings revealed that the average age of women in breathing-technique and control group was respectively 26+90/4 and 25/80+80/4 ,having no significant difference (p=0.835). The duration of active phase of labour in experimental and control group was 8/26+012/3 and 88/9+64/6 with significant difference (p=0.106).The duration of second stage of labour in intervention group score was 55/16+70/5 and in control group score was 85/23+90/18, revealed a meaningful difference (p=0.001).The findings concluded that using breathing technique during labour significantly reduces the second stage of labour and reduces pain in the first stage of labour.[54]

A controlled clinical trial study was conducted at the weekly obstetric clinics and ward number of 15 of De Zoysa Maternity Hospital. The aim of this study was to identify whether the relaxation and breathing exercises are effective in relieving the pain ,increasing the feeling of comfort among parturients and reducing the analgesic

requirement during labour. The population of the study was primigravida mothers from 32 weeks of gestational age and having a close female relative to be kept during labour. Based on the inclusion and exclusion criteria the samples were selected randomly and they were divided into experimental group (24 mothers) and control (24 mothers) group. For the experimental group, relaxation and breathing exercises were done for 3 days and one class was scheduled per 45 minutes for each person. The outcomes were measured by VAS and LAS to find out the significant improvement during labour. The analysis of data was done by the SPSS software and the independent t-test was used to assess any significant differences between the experimental and control group. The study result revealed that significant improvement found between the experimental and control groups regarding the VAS ,LAS score and analgesic requirement.(Significant value; VAS=0.001. LAS=0.001),Analgesic requirement =0.045).The study concluded that relaxation and breathing exercises are effective in reducing the intensity of pain, feeling of self control and minimising the analgesic requirement during labour.[59]

A quasi-experimental study was conducted among 82 primigravida mothers at Alzhra Hospital at Tabriz. The aim was to compare the effectiveness of massage therapy and breathing techniques on level of pain intensity, mode of delivery, physiological responses of labour pain and other outcomes. Primigravida mothers of 40 numbers who fulfilling the inclusion criteria, were selected randomly and divided into two groups of massagel(Ml) and breathing 1 (Bl).Then the another 42 mothers were selected based on the same criteria and randomly divided into two groups of massage 2(M2) and breathing 2(B2).ERA(educated researcher assistant provided education programme and training to Bl and B2 groups .As the labour process started, the ERA was present at the labour room, repeated the breathing technique for Bl and B2 groups. The breathing groups were performed the breathing technique s during the first stage of labour at 4,6,8,and 10 centimetre of cervical dilatation for 30 minutes. The intensity of pain was measured with numerical rating scale (NRS) 30 minutes after the cervical dilatation measurement.

The physiological responses also evaluated at the same time intervals. The ERA performed massage at the same dilatations for Ml and M2 groups. The data was collected similarly. The results shows that massage at 4 and 6 cm dilatations and breathing at most dilatations decreased pain intensity significantly. The mean difference of pain intensity and physiological responses to pain was not significant between the massaging and breathing groups at most cervical dilatations. The study concluded that providing the possibility of choosing one or both methods for labour pain relief and decreasing caesarean rate is suggested. [22]

2.3 Review related to studies on sacral massage in labour

A randomized controlled study was conducted among 77 healthy nulliparous mothers in labour on massage therapy in BC women's hospital Vancouver.The objective of the present study was to assess the effect on massage therapy during active phase

labour.The mothers admitted for spontaneous labour was the selection criteria. .A firm massage was administered by registered massage therapist for five hours duration during labour Vs standards care. The main outcome of the study was cervical dilatation at the time of epidural analgesia. The level of pain perception measured during three phases of labour, related to cervical dilatation of 3-4 cm, then 5-7 cm, and 8-10 cm by MG Gill present pain intensity scale. The mean score of cervical dilatation in massage therapy group was 5.9 cm compared to 4.9 in the control group. Scores on the MG Gill pain scale was consistency lower in the massage group (13.3 Vs 16.9 at 3-4 cm, 13.3 Vs 15-8 cm & 5-6 cm, & 19.4 Vs 28.3 at 7-8 cm).The study suggested that massage therapy was effective in pain reduction management during labour among primigravida mothers. [60]

A randomized controlled clinical trial study was conducted among 100 pregnant mothers in labour ward at fatemieh hospital, skahroud. Based on the inclusion criteria subjected were included in experimental and control group. Experimental groups received massage therapy for 15 minutes in every one hour during the uterine contractions. Questionnaires were completed in several stages, Data analysis was done using chi-square test,fishers exact test independent t-test Mann -whitney test and multivariable linear regression in SPSS-21 software It shows that significant was found($p<0.05$) in experimental group, ie the massage group had significantly reduced the duration of the first and second stage labour compared to the control group ($p=0.004$ and $p=0.02$ respectively).In addition, the Apgar scores of newborn at one minute and 5 minutes in experimental group score was increased significantly than control group ($p<0.000$). The study concluded that during labour massage therapy promotes to shortening the duration of the first and second stage and improves the first and fifth minutes of Apgar score.[61]

A Randomized controlled trial was conducted in USA, among 28 nulliparous mothers were selected randomly to receive massage therapy. The sacral massage was administered by a partner VS midwives to the experimental group. Control group did not receive any massage. The study reported that lower levels of stress and pain were experienced by

experimental group mothers. Cochrane database concluded massage therapy during labour significantly improves labour outcomes [62]

A randomized trial was conducted among 60 labouring primigravida mothers in Iran. The study was reported that there is decrease in severity of pain level during the earlier and late first phase of labour among mothers who have received firm massage by the maternity nurse compared to routine maternity care. The study revealed that massage therapy is effective in reducing the pain during labour.[62]

An experimental study was conducted to evaluate the alternative approaches among primigravida mothers with 37-42 weeks of gestation, to investigate the effects of massage and presenting an attendant on pain, anxiety and satisfaction during labour.

A total number of 120 primigravida women were randomly grouped as massage therapy(experimental) and routine labour ward care (control) groups. Only the experimental group had administered a massage therapy throughout labour and the control group received a routine labour ward care. After the 30 minutes of interval the anxiety, pain and satisfaction levels were measured. Pain level was measured by Self reported present pain intensity scale . Anxiety and satisfaction levels were measured by the standard visual analogue scale. The study revealed that massage group had lower pain state in attendant group during second and third stage labour ($p<0.05$). And satisfaction was higher in massage group in all four phases of labour. The duration of active phase was lower in massage group ($p<0.001$). The study concluded that massage during labour decreased pain intensity and promotes maternal satisfaction and decreased fear during labour, there by improved maternal outcome.[63]

A case control studies revealed that the mean pain intensity, which was assessed by VAS, was significantly lower in women receiving massage during labour was suggested that massage therapy during labour significantly reduced the other medical intervention and analgesic requirement during the first stage of labour, and also significantly reduces the

duration of the first stage of labour.[64]

A clinical trial was conducted among 60 women undergoing normal delivery in selected hospitals of Mahdiah and Hedayet hospitals at Tehran. The objective of this research was to determine the effect on of massage therapy towards pain severity and labour outcome among primigravida mothers. The primiparous women with single fetus in the age range of 20-34 years with cervical dilatation of 4 cms and less and a gestational weeks age of 38-42 weeks were the selection criteria. Mothers were divided into two groups of massage therapy and control .Effleurage massage on sacrum for 30 minutes given by the investigator during the uterine contractions of three phases of labour .The severity of pain level was assessed with visual analogue scale and the maternal outcome was assessed with structured questionnaire at cervical dilatation of 4, 8, and 8 cms .The collected data were analysed using descriptive, analytical, statistical methods by SPSS software. The results suggested that the mean score of level of pain severity during the first stage of delivery was significantly different between the experimental and control group. The mean score in active phase of labour was($p=0.009$),end of transitional phase of labour was ($p=0.014$) and end of first stage labour was($p=0.01$).The total hours in first stage labour had significantly reduced in experimental group than control group. The study concluded that massage therapy during first stage labour significantly reduces pain level and improves labour outcome.[64]

A randomized controlled study was conducted among nulliparous pregnant mothers of Referral Centre Women's Health at Ribeiro Preto. The objective of the study was to assess the effect of massage therapy for pain relief during active phase of labour. The primigravida mothers were divided into experimental (lumbosacral massage) and control group (routine maternity) randomly. A firm sacral massage given for 30 minutes duration between 4-5 cm cervical dilatation during uterine contractions. The level of pain assessed before and after therapy by numerical category scale, Diagram location of pain and pain

questionnaire McGILL (reduced form) .After collecting the data, the groups analyzed statistically using the linear regression model .The study results shows that the experimental group significantly ($p<0.05$) reduced pain level during active phase of labour among nulliparous pregnant women.[65]

A quasi - experimental study was conducted among 30 primigravida mothers on massage therapy on labour pain. The setting chosen for the study was Government medical college and hospital, Thiruvannamalai. The sampling technique adopted was non-probability convenience sampling .From the total of 30 women, randomly selected 15 for experimental group and 15 women for control group. Data collected after obtained formal permission. A pre-test was conducted for both experimental and control group. During contraction pain level assessed with numerical rating scale. After the pre test ,back massage given during the time of contraction to the experimental group, following by post test assessment done the groups, ie experimental and control. Results shows that massage group had lower level of pain intensity than the control group. The author concluded that statistically a significant lower level of pain perception was found in experimental group($p<0.001$). [66]

The clinical trial study was conducted to evaluate the benefits on sacral pressure in reducing intensity of pain and fear during delivery. The investigator selected sixty primigravida mothers randomly who were admitted for spontaneous normal delivery. The setting choosen was Jiroft city maternity hospital. Primigravida mothers were divided as two groups, comprising of 30 mothers in experimental group and 30 of them were in control group. The intervention group received sacral pressure for every twenty minutes during labour whereas the non-intervention group received normal routine care. The labour pain intensity was assessed by Present Behavioural Intensity (PBI) scale and Anxious status was assessed with Visual Analogue Scale for Anxiety (VASA). The experimental and control group primigravida mothers level of pain and anxious status was

compared during the cervical dilatations from 3-4 cm, 5-7 cm, and 8-10 cm of latent, active and transitional phase of labour assessed. The statistical analysis of unpaired t-test value shows that the intervention group had reduced pain intensity in first, second and third stage of labour (Stagel P=0.000, Stage2 P=0.002, Stage3 P=0.001) and level of anxious also reduced significantly in intervention group in latent phase (P=0.00). The results shows that 87% of primigravida mothers in intervention group had reduced pain intensity and effectively providing emotional encouragement during delivery(P<0.40). The study concluded that sacral pressure is best method of nursing intervention during labour and helps to reduce the pain intensity and anxiety among primigravida mothers.[67]

A randomized controlled study was conducted to assess the Effectiveness of massage on pain intensity during labour. The sample size was 60 primiparous women who expected to have a normal labour and were randomly divided into the experimental

(n = 30) and the control *(n* = 30) group. The experimental group primigravida mothers received massage intervention of abdominal effleurage, sacral massage and shoulder/back kneading for 30-min during uterine contractions. A firm massage was first administered by the researcher and then by the partner during each of the three phases of labour. The intensity of pain level between the experimental and control group was compared in the latent phase (cervix dilated 3-4 cm), active phase (5-7 cm) and transitional phase (8-10 cm) significantly reduced. The /-test demonstrated that the massage group had significantly reduced pain intensity in the latent, active and transitional phases. The study concluded that massage during labour was effective among primigravida women. [68]

A study was conducted on sacral massage during labour among women in BC Women's hospital, Vancouver. The sample size was 77 healthy nulliparous women presenting with spontaneous labour. The researcher was administered a firm massage therapy to the intervention (experimental) group. The duration of therapy was five hours during active phase where as the non intervention control) group received routine labour ward care..

The outcome criteria includes the cervical dilatation and pain intensity at the time of administration of epidural. And also the investigator used the McGill Present Pain Intensity Scale to measure and compared the perception of pain levels during the cervical dilation of 3-4 cm,then 5-7 cm, and 8-10 cm using the McGill Present Pain Intensity Scale. The results shows that the mean cervical dilation at the time of epidural insertion after adjustment for station of the presenting part, cervical dilation, and status of membranes on admission to hospital was 5.9 cm (95% CI 5.2-6.7) compared to 4.9 in the control group (95% CI 4.2-5.8). Scores on the McGill Pain Scale were consistently lower in the massage therapy group. The study concluded that massage therapy was effective in managing pain among women in active labour.[69]

A clinical trial study was conducted to evaluate the effect of massage therapy on severity of labor pain among primigravida mothers in selected hospitals of Tehran. It is a clinical trial on sixty women undergoing delivery in selected hospitals of Tehran. Target population was all the women admitted in Mahdi eh and Hedayat hospitals, Tehran, for delivery. The sample selection criteria was primiparous women with single fetus in the age range of 20 to 34years with cervical dilatation of four centimetres and less and gestational age of 38 to 42 weeks. Primigravida mothers were divided into massage therapy and control groups, randomly. The Severity of pain was measured in visual analogue scale (VAS) and the questionnaires were filled at the cervical dilatation of 4, 8 and 10 centimetres. Massage therapy was given to the experimental group, using effleurage method as a type of Swedish massage technique. The data was analyzed using descriptive (frequency distribution, mean and standard deviation) and analytical (independent t-test and chi square) statistical methods by SPSS software. The results revealed that the mean of pain severity at the first stage of labor was significantly different between the experimental group and the control group, at the start of active phase (p= 0.009), end of transitional phase (p= 0.014) and end of the first stage (p=0.01). Regarding the duration of the first stage of the labor was different in experimental and control group. The study concluded that Massage therapy could be introduced as a cost effective method during labour, regarding its supportive role. And also the massage therapy as a non-pharmacological intervention during delivery to reduce the labor pain and causes a decrease in the number of caesarean sections, reduces the fear and anxiety, induced by normal vaginal deliveries in young mothers.[70]

2.4 Review related to studies on position changes in labour

A randomized and quasi - randomized trials conducted to comparing the maternal positions of upright vs recumbent during the active phase of delivery.

Totally 25 trials of 5218 women were included in the study. The objective of the study to assess the effects of encouraging women to assume different upright positions (walking, sitting, and standing) vs (left lateral, supine and recumbent). After 30 minutes of position changes,the length of labour was assessed at the end of first stage of delivery and also the birth outcomes were measured among mother and baby . The study suggested that a significant improvement found between upright vs recumbent positions in the first stage of labour was approximately 1 hour and 22 minutes shorter duration among women who were randomized to adopt upright positions(15 studies, 2503 women),and also reduced the rate of caesarean section (9 studies, 2107 women). Also babies of mothers who were upright were less likely to be admitted to the NICU (1 study, 200 women).The study concluded that there was a significant difference between the upright position vs other recumbent, improves maternal and newborn outcome during active phase of labour among women.[71]

A systematic review on maternal positions were carried out during the first phase labour.The supportive studies information collected from the Online scientific library, MEDLINE,and Popline. The reviews included all randomized controlled trials, were systematically analysed for consideration, to determine the effect of maternal position during the first stage of labor. The investigators drawn information from related research reviews where several studies suggested that the duration of the first phase of labour was significantly reduced among various maternal positions used by mother. The findings shows that the high level of heterogeneity (12 = 88.4%) was found . The results shows that maternal positions during labour promotes other outcomes of labour like use of analgesia, labour augmentation, mode of delivery, and condition of the baby at birth. This study concluded that adoption of the upright position or ambulation during first stage of labor may be safe and significantly effective during first stage of labour. [72]

An observational study was conducted among women's choice of positions in terms of labour process ,Pavoda, Italy .It is the comparative study to assess effectiveness on

recumbent vs alternative positions during labour on duration of labour, mode of delivery,fetal head rotation and newborn wellbeing. Primiparous women with physiological pregnancies and single cephalic foetuses were eligible for the study . Totally there were 225 mothers were selected and divided into two groups such as, group A which includes 69 mothers and group B which includes 156 mothers. Group A mothers adopted recumbent position for more than 50% in their delivery duration whereas Group B-used alternative positions during labour. Study revealed that significant improvement between the two groups in terms of labour duration, numerical rating pain score and use of analgesia, type of labour, need of episiotomy procedure and fetal occiput rotation. The study concluded that alternative use of maternal positions may positively promote the labour process by minimizing the pain during labour, operative vaginal delivery, caesarean section and episiotomy rate. Mothers need to be encouraged to adopt alternative positions during labour [73]

A meta-analysis of review was done to investigate the effects of assume different upright positions of sitting, walking, kneeling and standing vs recumbent positions of supine, lateral and semi-recumbent among women on duration of first stage labour , mode of delivery and maternal and newborn outcome. The researcher collected data from Cochrane neonatal attendance from November 2008. Data analysis revealed that randomised and quasi-randomised trials showed the upright position found significant effectiveness during the first phase of labour. Data were collected systematically through Cochrane Handbook of Interventions, *for* assessing the study quality and analysing results. Each study was reviewed independently by the researcher. The supportive review includes 21 research studies with a total number of 3706 women. Overall, the duration of labour was approximately one hour shorter during first stage among upright compared to recumbent positions (MD -0.99, 95% CI -1.60 to -0.39). Women in upright positions were significantly reduced the use of epidural analgesia (RR 0.83 95% CI 0.72 to 0.64).Most of these studies had suggested that upright positions during first stage of labour promotes

satisfaction reduced labour duration among women.[71]

A true experimental study was conducted to assess the Effectiveness of standing position during labour on spontaneous uterine contractility and other aspects among nulliparous women. The goal of this study was to assess the comparison between standing and supine position with uterine contractility, pain intensity and level of comfort between the mothers of standing and supine position. The sample size was twenty normal nulliparous mothers who had changed the position from supine to standing for every 30 minutes interval. Fetal heart rate and intrauterine pressure monitored continuously during labour. Cervical dilatation was measured at every thirty minutes and no analgesia was given to the mothers. The pain level was assessed during supine and standing positions of uterine contractions in each one of both positions and mothers were more comfortable. The results was found that the intensity of uterine contractions was significantly higher in 15 out of the 20 mothers in standing position, the frequency of uterine contractions diminished significantly in one third of the mothers, Uterine activity is increased significantly in half of them.

4. Consistently, less pain perception during uterine contractions in standing position.
5. Comfort level was more in upright position. The average labour duration was 3 hrs 55 min which is shorter in standing position. There was no complications occurred, with standing during labour, on the mother or fetus. The study concluded that mothers adopting of standing position during labour was effective and encouraged to use this position more frequently in clinical obstetric.[74]

A study was conducted to determine the Effectiveness of Maternal Position on Uterine Contractility and Efficiency' among labouring mothers. The investigator compared the sitting position benefits with supine and side-lying to determine the effects on uterine contraction pattern and maternal outcome. The various position changes highly influences the maternal effects in each the phase of labor. The study revealed that sitting position promotes frequent uterine contractions, side-lying position enhances strong uterine

activity and its efficiency in both early and late labour. The study concluded that adopting various positions during labour promotes good uterine contraction pattern.[75]

A Randomized and quasi-randomized trial was conducted to assess the systemic review on maternal positions and mobility during first stage of labour. The objective was to assess the effects of encouraging women to assume different upright positions (including walking, sitting, standing and kneeling) versus recumbent positions (supine, semi recumbent and lateral) in the first stage of labour. The outcome variables include, length of labour, and labour outcome. The investigator collected data from the Cochrane neonatal attendance from the year January 2013. The first stage of labour was approximately one hour and 22 minutes shorter for women randomized to upright as opposed to recumbent position and women who were upright were also less likely to have caesarean section, evidenced from 14 studies, among 2682 women and less likely to have an epidurals (nine studies, 2107 women) and babies of mothers who were upright were less likely to be admitted to the neonatal intensive care unit, however this was based on one trial. The study concluded that upright positions were more effective in significantly reduces the length of labour, analgesics and caesarean section rate. [76]

A randomized controlled trial was conducted to evaluate the "vertical position during labour on pain and satisfaction" among primigravida mothers. The investigator

analysed data from 107 primigravida mothers who adopted vertical position at the time of labour was evaluated. The statistical analysis of median percentage for the duration of labour for women adopted more than 50% duration in vertical position during labour variables was analysed. The Mann-Whitney and Kruskal-Wallis tests were used for analysis to determine the differences among experimental and control group. The results found that mothers in vertical position during labour was statistically significant on maternal outcome ($p<0.005$) compared to control group score > 7 ($p=0.02$). Primigravida mothers adopted more than 50 % of the time in the vertical position had increased satisfaction during at 4 cm and 6cm of cervical dilatation ($p=0.0$ 2 and $p=0.03$, respectively) and this study concludes that the vertical position helped to relieve labour pain and increased comfort and patients satisfaction.[77]

2.5 Review related to studies on early initiation of breast feeding through breast crawl.

A prospective, randomized, single blinded study was conducted to analyse the associating factors related to acceptability and feasibility of breast crawl on early initiation of breast feeding in a busy labour ward. The experimental group implemented breast crawl where the control group received normal routine care. The associating factors of acceptability and feasibility of breast crawl was determined by analysis of structured tools administered to midwives and obstetricians. Descriptive analysis and/^{2}-test was used to assess the statistical analysis and improvement was compared between the experimental and control group mothers. The results found that implementing breast crawl technique in busy labour ward significantly improves lactation among newborn($p<0.0005$). as well as the extent of neonatal weight loss on day 3 (0.032). The study concluded that breastfeeding through breast crawl technique promote positive short-term breast feeding outcome. [78]

A randomized control trial was conducted to evaluate the breast crawl as a method for early initiation of breast feeding in Department of Paediatrics, Neonatal division and Labor room of Obstetric Department in Rukamani Chainani building of Government Medical College and S.S.G hospital, Vadodara. The outcome variables include, effect of breast crawl on feeding practices towards on baby's weight gain, and on morbidity pattern among newborn. Design was randomized control trial, of two introductory seminars of two hours duration each was held, which included a talk on the concept of breast crawl, lactation management in brief and the protocol of the thesis was briefed. The concerns and queries that arose were discussed and settled amicably. Photographs and posters were put in the labor room complex to help the nursing staff, telephone number of researcher and of the NICU on call resident were displayed such that supervision could be offered to babies on breast crawl. Each baby after birth and after cord was cut and who satisfied the inclusion criteria were randomized into either the breast crawl group or conventional care group. Antenatal and other demographic data was collected from records and personal interview, daily monitoring was done in form of weight gain or weight loss; breastfeeding practices were observed and problems regarding feeding were noted and morbidity if any was recorded. The study concluded that there was a significant improvement found on breast crawl towards the newborn's onset of lactation [79]

A comparative study was conducted to evaluate the positive outcome on breast crawl technique between babies born through normal birth and caesarean births.The study was conducted in Alzahra Hospital in Tabriz, Population of the study was all newborn born from the year October 2012 to December 2013 by either normal delivery or caesarean births. Immediately after delivery the newborn babies were placed prone on their mothers' abdomen and between chest on both groups. Results revealed that newborn born by normal delivery found high significant in achievement of breast crawl than newborn's delivered by caesarean section. And babies from caesarean section group had minimum time taken to complete breast crawl. Data shows that babies delivered through vaginal

delivery had significantly more success in BC than babies born through the caesarean delivery (88.01% versus 11.21%). Moreover, babies in the CS group used significantly less time to achieve BC (45 versus 28 minutes) than babies from normal vaginal delivery .The study suggested that there was significant difference found in time taken to complete breast crawl between the normal mode and caesarean mode babies.[80]

A study was conducted to assess the effects of Breast Crawl as the natural method for initiation of breastfeeding . A normal newborn, when placed on the mother's chest/abdomen, has an inborn ability to crawl to the breast and take the first breastfeed. This is known as the breast crawl. UNICEF, WHO, WABA, all the governmental agencies and NGOs advocate exclusive breastfeeding for the first 6 months of life and to continue breastfeeding for 2 years along with proper weaning foods (Ten steps, BFHI, IYCF recommendations). All the agencies recommend that Breast feeding should be initiated in the first hour of birth. Breast Crawl is the method/technique which helps initiation of breastfeeding in the most natural way. It is novel, easy, readily available, easily reproducible, evidence based and cost effective miraculous method to initiate breastfeeding, the nature's way. It doesn't require elaborate preparations or instructions and can be performed in all the birthing settings/units. Initiation of breastfeeding involves two components: the skin to skin contact and the first breastfeed. Traditionally, we have been taught to initiate breastfeeding within one hour of birth. As a result, most of the times, the mother gets a well wrapped baby to feed within an hour of birth even in a few baby friendly hospitals and consequently all the advantages of skin to skin contact are lost. Skin to skin contact helps maintain the baby's body temperature, helps colonization of the maternal bacterial flora, maintains baby's sugar levels, improves neonatal metabolic stability, enhances maternal - infant relationship/bonding and earlier establishment of effective suckling and feeding behaviours. All these enhance the newborn's sensory neural development. Breast Crawl allows maximal skin to skin contact in the most natural way.[81]

A cross sectional research was conducted at government hospital in South Sulawesi, Indonesia. A survey conducted among 248 mothers and 5 informants during the period between February to August 2008. The study approach was used by combining quantitative and qualitative method. The findings of the study reported that women's knowledge is the most influencing factor which obstructing the implementation of early initiation of breastfeeding. The other some factors also obstructing the implementation of breast crawl were inclusive of tiredness of mother, lack of knowledge, shy , professional skill of midwife, poor communication strategy, individual motivation, self confidence and no policy about this from local government clinic. The promotion of breast crawl by early initial breastfeeding need to be implemented by midwives so that they can understand the short and long term benefits of early initial breastfeeding and implement this for every delivery'[82]

A prospective cohort study conducted to analyse the early skin- to -skin and exclusive breastfeeding among parturient mothers. The data were collected from 19 hospitals in San Bernardino and riverside countries. The California Perinatal Services Network were used to collect the information among all mothers(n=21842) .The inclusion criteria was the mothers who delivered a singleton infant(37-40 weeks gestation) between July 2005 to June 2OO6.Multivariate logistic regression analysis used to correlate the factors, that results showed that maternal infant - feeding method intention, intrapartum variables, and early skin-to-skin motherinfant contact during the first 3 hours following birth were correlated with exclusive breastfeeding during maternity hospitalization. The study suggested that early skin-to-skin contact for 30 minutes duration promotes better newborn outcome than control group.(p=3.145;95% ,). [83]

A non-randomized controlled clinical trial was conducted at a labour and delivery unit of National Medical Institution in Damanhour, Albehera Governorate, Egypt. The goal of this study was to determine the effect of early maternal/newborn skin-to-skin contact after birth on the duration of third stage of labour. There were 100 mothers selected by

purposive sampling .The mothers divided into two groups , experimental (50) who received skin-to-skin contact and control group (50) received routine hospital care. Three tools were used to collect the data.l.structered interview to collect demographic variables and obstetrical information ,2.assessment of mothers during third stage of labour 3.Infant Breastfeeding Assessment Tool and outcome assessment of first breastfeeding. The results revealed that success in first breastfeeding was higher among experimental group than control group. The study concluded that there are statistically significant differences between the experimental and control group in the third stage of labour duration, complete placental separation, and immediate contraction of uterus and no evidence of excessive blood loss. The mean duration of the third stage of labour in the experimental group was significantly shorter (2.8+0.857 minutes) than control group (11.22 +3.334 minutes)($p<0.01$) .The study revealed that mothers who practice early maternal/newborn SSC immediately after delivery, experience shorter duration of third stage labour and early successful initiation of breastfeeding. The study recommended that educational and training programme need to be provided to all midwives and nurses working in the delivery room about the implementation of SSC for all mothers [84]

A study was conducted based on randomized controlled trail in the Department of Obstetrics of Pakistan Institute of Medical Sciences, Islamabad, from November to December 2009.The aim of the study was to evaluate the effect of motherinfant skin-to-skin contact on breastfeeding behaviour of newborn. A total of 183 mother-infant pairs (92 in SSC experimental group) and (91 in CC - conventional care, control group) were analyzed for breastfeeding behaviour of newborn with IBFAT tool. The results revealed that the first breastfeed in SSC group was 26.25% more successful .ie the SSC group had 58.8% improvement as compared to CC group had 32.5% improvement was found($p<0.001$). The mean duration in skin to-skin contact group newborn babies early breastfeeding was 61.6 minutes lesser whereas the conventional care group score was (40.62 vs 101.88; $p<0.001$).The mean time to complete initial breast feeding was 207

minutes earlier in skin to-skin contact group of newborn(3 57.50; p<0.001). It shows that high level of significance found among experimental group than control group(56%vs 6.2%)The study concluded that maternal-infant early skin-to-skin contact significantly improved the first breastfeed and enhanced the exclusive breastfeeding till one month of age.[85]

A prospective cohort observational study conducted on breast crawl with 200 research cases in DR.B.R. Ambedkar memorial, Hospital,(experimental) and Pt, JNM medical college paipur. (Control group) . Based on the inclusion criteria full term healthy newborn babies delivered by vaginally were selected. The study results suggested that out of 200 full term newborns, 166 newborns had able to crawl successfully within 50min. The maternal outcomes includes that 1.95% mothers had early expulsion of placenta, 96% mothers had decrease in uterine size, 100% breast crawl mothers were satisfied and 93% mother had no anaemia in postpartum period. This is a new research study which was conducted in India. The study concluded that breastfeeding through breast crawl promotes good maternal and newborn outcome by preventing PPH, anaemia, breast feeding failure and sense of wellbeing.[86]

A study was conducted to assess the effect of initiation of breast feeding within one hour of the delivery on maternal-infant bonding in Punjab. Two hundred and eighteen mother -infant dyads were enrolled for the study and considered for analysis. Each group (control and experimental) comprised of one hundred and nine mother-infant dyads. Mother who initiated breast feeding after one hour of the delivery were considered in the control group and the mothers in the experimental group initiated breastfeeding within one hour of the delivery. The value of t at 24 hours of the delivery ,mean and SD scores,73.6 and 9.0 in control group, while the score was 83.3 and 5.3 in experimental group and at the 48 hours it was 74.5 and 8.9 in control group and experimental group score was 83.3 and 5.3. Significant difference p=0.000<0.05 was found between the maternal infant bonding scores of control and experimental group. The result revealed that initiation of

breastfeeding within one hour of delivery improves maternal-infant bonding. So, it is recommended that breast feeding should be initiated within one hour of delivery.[87]

A clinical trial study was conducted among parturient on breast crawl, The aim of the study was to initiate breast feeding within half an hour after birth through breast crawl technique .Immediately after delivery a newborn when placed on her mother's chest, has the ability to find her mother's breast all on her own and to decide when to take the first breast feed. This is called breast crawl. The researcher reported that human babies like the young ones of other mammalian animals when kept in skin to skin contact between their mother's breast can initiate breast feeding on their own. Immediately after birth, the newborn able to suck spontaneously with rooting movements, the activity of hand into mouth make

tendency of sucking behaviour and rooting movement enables for successful sucking. The whole activity takes about 35-50 minutes. The study concluded that early initiation of breastfeeding through breast crawl prevents hypothermia, baby gets early protection from infections from colostrums as the first feed and achieves effective feeding skills faster.[88]

CHAPTER III

MATERIALS AND METHODS

Research methodology is the steps of conceptual structure based on that the study is conducted. It is a blue print for collection, analysis and measurement of data. In research methodology researcher specify which specific design was adopted and how the samples were chosen.

Research methodology is a systematic way to solve the research problem and also to carry out the academic study and research into correct manner.[89] The present study was conducted to evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers in selected hospitals.

This chapter describes the aspects like research approach, research design, study variables, selection of setting, population, samples size, sampling method, criteria for selection of sample,development of intervention tool, validity and reliability of the tools, ethical approval, pilot study report, data collection procedure and plan for data analysis.

3.1 RESEARCH APPROACH

The research approach is the key part of conducting any research. Based on that the research study is conducted. The research approach used in the study is an applied form of research to find out how well the intervention is effective. In this study the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers were evaluated. Therefore on quantitative evaluation research was essential to test the effectiveness of the intervention for this study.

3.2 RESEARCH DESIGN

It is the blue print or overall plan for answering a research question, including specifications for enhancing the integrity of the study.[89]

The design used for the present study was True-experimental- post test only control group design was selected to evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers.

Post test only (control) design is composed of two randomly assigned groups of experimental and control. In this design , intervention is implemented to the experimental group only, Post-test assessment is carried out both the experimental and control group, to evaluate the effectiveness of intervention.[90]

Fig. Diagrammatic presentation of the design

Randomly selected Primigravida mothers	**Treatment**	**Post test**
Experimental group	• Slow paced breathing exercise starts from 37 42 weeks of gestation and continued for till the end of first stage of labour • Sacral massage from the beginning of the latent phase of labour to till the end of first stage of labour • Position changes of left lateral to up right from the beginning to till end of first stage labour • Breast crawl implemented immediately after the delivery of baby till the completion of first breast feed	Oi
Control group	-	Oi

X - Selected nursing intervention includes slow paced breathing exercise, sacral massage, position changes and breast crawl.

Oi - Post test observation on maternal and newborn outcome among primigravida mothers in experimental and control group

3.3 SETTING OF THE STUDY

Research settings are specific places in a research where data collection is to be made. The setting was selected on the basis of availability of samples, feasibility of conducting the study, and permission of authorities.[90]

The setting chosen for the study was,

1. **Annai Theresa Hospital, Medavakkam, Chennai,** there were totally 250 primigravida mothers from 37-42 weeks who were attending the outpatient department per year.

2. **Narayanaa Hospital, Purasawalkam, Chennai,** there were totally 230 primigravida mothers from 37-42 weeks who were attending the outpatient department per year.

3.4 VARIABLES FOR THE STUDY

Variables are characters that can have more than one value. The categories of variables discussed in the present study was,

3.4.1 Independent variable: selected nursing interventions which includes slowpaced breathing exercise, sacral massage, position changes and breast crawl.

3.4.2 Dependent variable: Maternal and newborn outcome

Maternal outcome which includes pain perception during labour, duration of labour, cervical dilatation, uterine contractions, colour of amniotic fluid, fetal heart rate, fetal movements, presence of episiotomy, perineal tear, maternal fatigue, blood loss in labour, mode of delivery, separation of placenta, bladder and bowel pattern, involution of uterus, vital signs and conscious status.

Newborn outcome which includes Apgar score, temperature, birth weight, comfort,

quality of breast attachment, frequency of feeding and presence of meconium stain

3.4.3 Demographic Variables: It consists of demographic characteristics of primigravida mothers ie. Age, religion, education, occupation, income, family type, living area, antenatal check up, gestational weeks, history of dysmenorrhoea

3.5 POPULATION

Population is the entire aggregation of subject similar characteristics and on whom the researcher would generalize the study findings. The population encompassed the target and accessible population.

3.5.1 Target population

The population, the investigator had chosen for the present study to make generalization. The target population for the study was all the primigravida mothers from 37-42 weeks of gestation.

3.5.2 Accessible population

Refers to the aggregate of subject with whom the designated criteria are conformed and accessible population was primigravida mothers from 37-42 weeks of gestation who were attending the outpatient department, and admitted for undergoing normal delivery in Annai Theresa Hospital ,Medavakkam, Chennai consisted of 116 primigravida mothers and Narayanaa Hospital, Purasawalkam, Chennai, consisted of 115 primigravida mothers from each hospital. Total number of sample was 231 primigravida mothers.

3.6 SAMPLE AND SAMPLE SIZE

A sample is the basic element of the population about whom the information was collected, to represent the concept of interest. Primigravida mothers from 3742 weeks of gestation were selected from these 2 hospitals, which full fill the inclusion criteria were selected as

the samples of the study.

3.6.1 Sample Size

The sample size comprised of 250 primigravida mothers from 37-42 weeks of gestation from two private hospitals. This sample size was estimated by using the Power Analysis. The attrition rate was 4% in both experimental and control group. The researcher included 231 samples for the study, out of which 116 were in experimental group and 115 were in control group. Remaining 19 cases were left the study for various reasons like high risk associated with emergency caesarean section and went to other hospital for delivery.

By using power analysis

$$\text{Sample Size} = \frac{Za^2\ (p \times q)}{d^2}$$

$Za^2 = 1.96$ it is table value score for 95% interval.

p = assumed or estimated proportion of clients 82% (0.82)

q = 1 -p (1 -0.82 = 0.18)

d = Margin error, i.e. 5% (0.05)

$$n = \frac{(1.96)^2 \times 0.82\ (1-0.82)}{(0.05)2}$$

n = 227

Considering the attrition rate as 4% .

Total sample size = 250

3.7 SAMPLING TECHNIQUE

Simple random sampling technique was adopted for the study.

Simple random sampling technique is based on theory of probability, in which the researcher given a equal chance to the subject in a population to select the sample.[90]

In south region of Chennai district private hospitals, according to the senses 2012 approximately 550 deliveries conducted per year. There were totally 16 private hospitals, out of which the investigator selected two hospitals by simple random sampling technique (Lottery method). The setting chosen for the study was Annai Theresa hospital, Medavakkam, Chennai (experimental group) and Narayanaa hospital, Purasawalkam, Chennai (control group). These two hospitals total bed strength was 150, where 20 number of beds were allotted for obstetrics and gynaecology including labour ward and also they were following similar procedures and settings in the labour ward.

Experimental group: The primigravida mothers from 37 to 42 weeks of gestation attending the outpatient department at Annai Theresa hospital, Medavakkam, Chennai. There were totally 250 primigravida mothers from 37 to 42 weeks who

were attending the outpatient department during data collection period, out of which the investigator selected 125 samples who fulfilled the inclusion criteria .In that 116 primigravida mothers who were admitted for undergoing normal vaginal delivery in the same hospital were included as samples in the study. Remaining 9 primigravida mothers were left from the study during the time of labour due to high risk factor.

Control group: The primigravida mothers from 37 to 42weeks of gestation attending the outpatient department at Narayanaa hospital, Purasawalkam, Chennai.

There were totally 230 primigravida mothers from 37 to 42 weeks who were attending the outpatient department during data collection period, out of which the investigator selected 125 samples who fulfilled the inclusion criteria. In that 115 primigravida mothers who were admitted for undergoing normal vaginal delivery in the same hospital were included as samples in the study. Remaining 10 primigravida mothers were left from the study during the time of labour due to high risk factor.

SIMPLE RANDOM SAMPLING TECHNIQUE

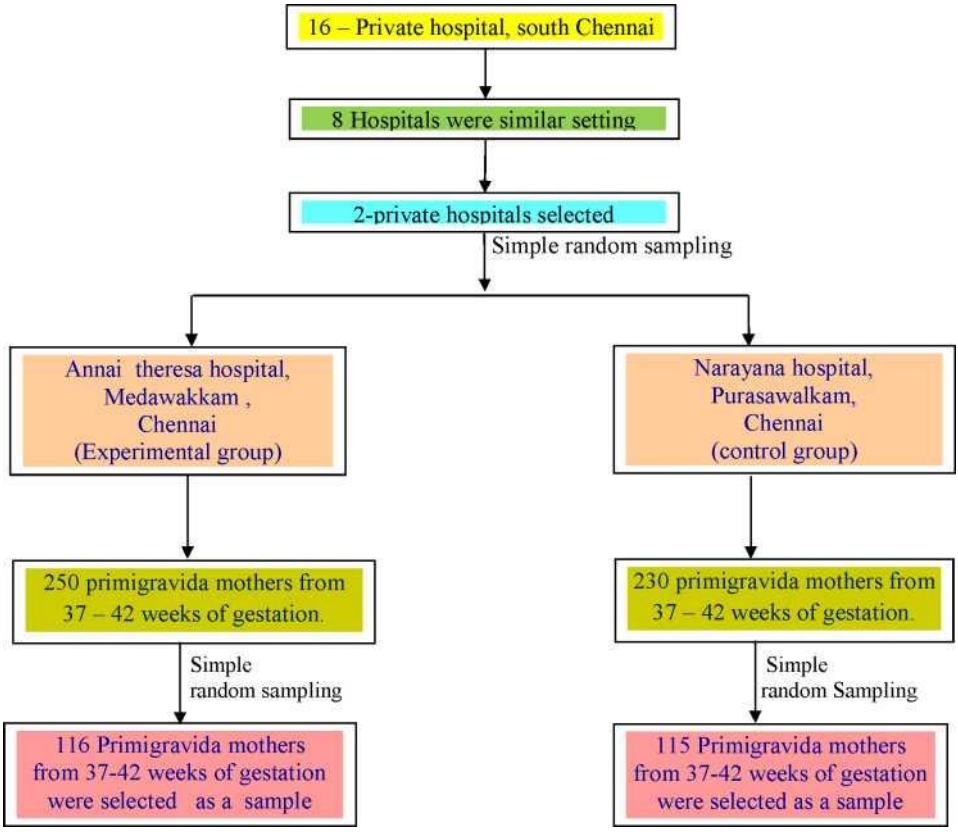

Fig.3.1.1 Diagrammatic presentation of sampling Technique

3.8 CRITERIA FOR THE SELECTION OF SAMPLE:

3.8.1 Inclusion criteria:

Primigravida mothers,

> Completed from 37 - 42 weeks of gestation.

> Age group between 18-29 years and above.

> Who are undergoing normal delivery

> Who are willing to participate in the study

> Who gave consent to participate in the study

> Who were present during the period of data collection

3.8.2 Exclusion criteria:

> All multigravida mothers

> Who were having any other medical and obstetrical problems

3.9 DATA COLLECTION INSTRUMENTS

A. DEVELOPMENT OF THE TOOL

The investigator used the following steps for preparation of the tools for the study

- Extensive review of literature
- Preparation of the blue print for the tools
- Consultation with experts from the field of study

  Preparation of the final draft of the tools
- Editing of the tools

- Review of literature

The investigator did an extensive review of related literature from books, journals, manuals, reports published researches, newspapers and internet to develop study instruments

- **Preparation of blue print**

The blue print included Questionnaire to collect Demographic data, Visual analogue scale, Apgar score chart and observation checklist

- **Consultation with experts from the field of study**

The tools were sent to panel of experts comprising from the fields of Maternity Nursing, Medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynaecologist, and nursing research department experts

- Preparation of the final draft
- Editing of the final tool

B. DESCPRITION OF TOOLS:

Four parts of tools were used.

- Part A: It comprised of semi structured tool of demographic variables of primigravida mothers.
- Part B: It consists of visual analogue scale for pain assessment during latent, active, and transitional phase of labour.

- Part C: It includes the observation checklist to assess the maternal outcome during labour.
- Part D: It includes DI and D2. DI comprised of Apgar score chart to assess the immediate newborn outcome and D2 includes the observation checklist to assess the newborn outcome for 24 hours.

Part A:

It comprised of semi structured demographic characteristics of primigravida mothers, ie Age, religion, education, occupation, income, family type, living area, antenatal check up, gestational weeks , and history of dysmenorrhoea.

Part B

Visual analogue scale was used to assess the level of pain perception experienced by primigravida mothers during labour process. It consists of 1-10 score. The perception of pain levels are

> Mild pain

> Moderate pain

> Severe pain

Scoring procedure

Based on the percentage of scores the level of pain perception graded in three categories, They are Mild, Moderate, and Severe.

Level of pain perception	Actual scores	Percentage of scores
Mild	1-4	<40%
Moderate	5-7	41-70%
Severe	8-10	>70

Part C:

It consists of observation checklist to assess the maternal outcome. The maternal outcomes were assessed by twenty items with 2 criteria, in which the maximum score was 40 and minimum score was 20.

Scoring procedure

Based on the percentage of scores the maternal outcomes were graded in three categories. They are Poor, Fair, and Good.

Maternal outcome	Actual scores	Percentage of scores
Poor	20	50%
Fair	21-30	51-75%
Good	31-40	>75%

Part D:

It consists of DI- Apgar score chart and D2- observation checklist to assess the newborn outcome.

Part D (1):

It includes Apgar score chart to assess the immediate newborn outcome. Based on the percentage of scores the Apgar score of newborn were graded in three categories, that is no depression, mild depression, and severe depression.

Apgar score	Actual scores	Percentage of scores
No depression	7-10	70-100%
Mild depression	4-6	40-60%
Severe depression	0-3	0-30%

Part D (2):

It comprised of observation checklist to assess the newborn outcome. The newborn outcomes were assessed by 6 items with 2 criteria, in which the maximum score was 12 and minimum score was 6.

Scoring procedure: Based on the percentage of scores, the newborn outcomes were graded in three categories. They are Poor, Fair, and Good.

Newborn outcome	Actual scores	Percentage of scores
Poor	6	50%
Fair	7-9	51-75%
Good	10-12	> 75%

3.10 INTERVENTION

The researcher developed selected nursing interventions of slow paced breathing exercise, sacral massage, position changes and breast crawl (experimental group) and routine labour care (control group) was given to the individual basis of primigravida

mothers from latent phase of labour to first stage of labour and immediately after the delivery of the baby for each subject in both the groups.

3.11 CONTENT VALIDITY OF THE TOOL

Content validity is the degree to which the items in the instruments adequately represent the content for the concept being measured.

The content validity of the demographic variables and observation checklist for maternal and newborn outcome was validated by the panel of experts comprising from the fields of Maternity Nursing, medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynaecologist, Statistician, and nursing research department experts and the content validity index score was 8.5. The expert's suggestion were incorporated in designing the final tool for the study in consultation with Guide, Coguide, Advisory Committee members and Statistician for its appropriateness. The tool was modified according to suggestions and recommendation of experts. **(Annexure VIII)**

3.12 RELIABILITY OF THE TOOL

Reliability is the degree of consistency in which an instrument measure what it is designed to measure.

The tools were translated in Tamil and reliability was tested. Visual analogue pain assessment scale and Apgar score chart was standardized by using inter-rater reliability. The reliability of this tool was 0.76 and 0.74 which was highly reliable.

The observation checklist for maternal and newborn outcome was standardized by using inter-rater reliability. The ' r' value was 0.77 for maternal outcome and 0.79 for newborn outcome which was highly reliable.

3.13 ETHICAL CONSIDERATION

The investigator considered and followed the ethical principle preceding the investigation.

The investigator adhered to the following actions in order to protect the ethical right of the primigravida mothers on maternal and newborn outcome.

Human Rights

1. Ethical committee approval was received from the Managing Director of hospital.
2. Written consent was obtained from the Head of the department in obstetrics and Gynaecology to conduct study.
3. Content validity was received from the various experts in field of Maternity Nursing, Medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynaecologist, Statistician, and *nursing research department experts*

Beneficence & Non-Maleficience

Potential benefit and risk was explained to the subjects.

Dignity

4. Informed consent was obtained from the subjects related to the study purpose, type of data, nature of commitments, participations and procedure.
5. Pilot study was executed to check the feasibility and time requirement of the study.
6. Subjects' right to withdraw / withhold the information was ensured before data collection.
7. Investigator contact information was disseminated to all the subjects who participated in the study.

Confidentiality

8. Confidentiality and anonymity pledge was ensured.

Justice

The selected nursing interventions like slow-paced breathing exercise, sacral massage, position changes and breast crawl technique were implemented to the subjects in the labour ward.

3.14 PILOT STUDY

The investigator obtained formal consent from, Administrative officer, Head of obstetrics and Gynaecology and Labour ward staff nurse in charge. The purpose of the study and confidentiality was explained to the primigravida mothers from 37 to 42 weeks of gestation. Pilot study was conducted from 1.04.2015 to 15.06.2015.The investigator selected 20 primigravida mothers in Mother and child care hospital Maduranthagam as per the inclusion criteria for the study. The selected nursing interventions of slow-paced breathing exercise was demonstrated by investigator and advised to practice from 37 to 42 weeks of pregnancy to till end of the first stage labour during uterine contractions. Simultaneously sacral massage was given and positions of upright and left lateral were changed alternatively till the end of the first stage of labour. After the interventions, pain perception was assessed with visual analogue scale during latent, active, and transitional phase of labour. After delivery of the baby and cutting the cord, if the status of baby was good, initiated breast feeding through breast crawl. Then the maternal and newborn outcome was evaluated by observational checklist.

The result of the pilot study revealed that the tool was reliable and the study was feasible. The pilot study aided the investigator to determine the method of statistical analysis and the time requirement for data collection and intervention procedure.

3.15 METHOD OF DATA COLLECTION

The data was collected from primigravida mothers from 37 to 42 weeks of gestation in experimental group and control group. After obtained permission from Administrative

officer, Head of the department of Obstetrics and Gynaecology, Labour ward staff nurse in charge of Annai Theresa hospital, Medavakkam, Chennai and Narayanaa hospital, Purasawalkam, Chennai, the investigator selected 231 primigravida mothers(116 in experimental group and 115 in control group) who fulfilled the inclusion criteria. The investigator introduced her and explained the purpose of the study to the primigravida mothers and assured them the confidentiality of their information.

EXPERIMENTAL GROUP

After obtaining the written consent from the primigravida mothers in the outpatient department of Obstetrics and Gynaecology the investigator collected the demographic data. Then the investigator taught slow-paced breathing exercise to the experimental group.

Slow -paced breathing exercise

The technique of breathing exercise involves breath in through nose, in a deep, slow manner for 5 seconds, and breath out through mouth in the same slow deep way for 5 seconds, totally 6-9 breaths per minute for every one hour which is demonstrated by investigator to the primigravida mothers from 37 weeks to 42 weeks of gestational age and instructed to practice the same exercise to be continued from the onset of true labour to till the end of first stage of labour, during the uterine contractions , in the labour ward.

Sacral massage

At the beginning of the latent phase of labour (cervical dilatation 0-4cm) position the primigravida mothers in left lateral. A firm message given by investigator in lower thoracic to sacrococygeal region(T10 and S4) which corresponds to the path of the hypo gastric plexus and the pudendal nerve responsible for innervations of the paravertebral ganglia, delivery canal and perineum.

The technique of massage which involves in a rhythmic, ascending, kneading hand

movements with sacral pressure for 10-15 minutes in everyone hour till the end of first stage labour during uterine contractions.

Positions

After 10 minutes from the completion of sacral massage , position the primigravida mothers in left lateral to upright (sitting(or) standing with support) changed alternatively for 20-30 minutes in every one hour till the end of first stage labour.

Following by these interventions the level of pain perception was assessed with visual analogue scale during latent, active, and transitional phase of labour.

Breast crawl

After the delivery of baby and cutting the cord, if the status of baby is good colour , active , and appears normal, dried the head and back, and put immediately on the mother's abdomen. The newborn nose to be in the midline

of the mothers chest and eyes at the level of the nipples and allowed to attach spontaneously to the breast and to continue for 40-45 minutes, till the completion of first breast feed. Gently assist the baby while taking feed.

Mother and baby at that time covered with thin sheet. After the first breast feed, baby was taken to warmer for cord care, eye care, and various routine procedures.

After the nursing interventions the maternal and newborn outcome was assessed with observation checklist for 24 hours.

CONTROL GROUP

After getting the written consent from the primigravida mothers in the outpatient department of Obstetrics and Gynaecology, the investigator collected the information about the demographic data. After getting admission to the labour ward, the routine labour ward care was followed up to the primigravida mothers. The level of pain perception was assessed during latent, active, and transitional phase of labour with visual analogue scale by the investigator. After the delivery of baby the maternal and newborn outcome was assessed with observation checklist for 24 hours.

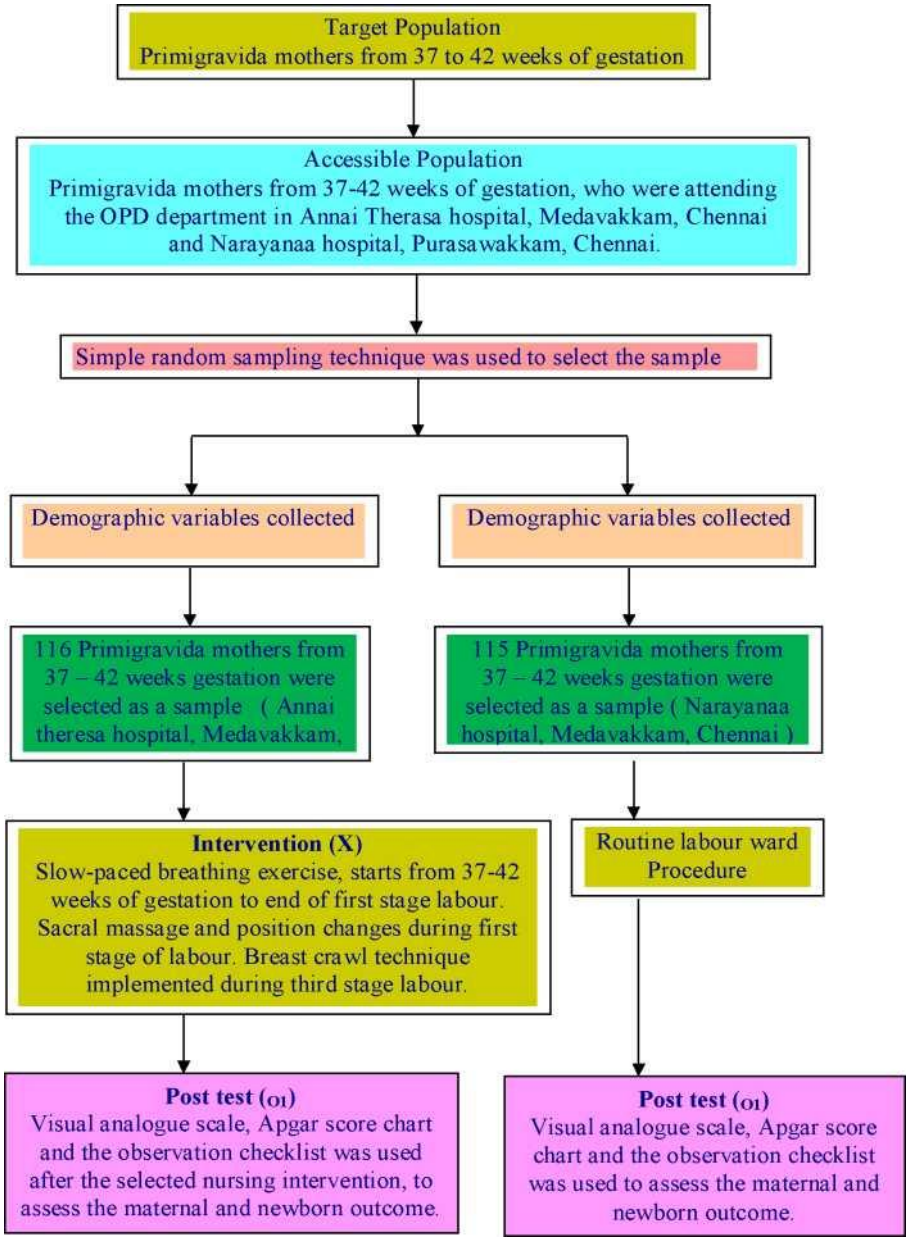

Fig.3.1.2 Schematic Representation of Data Collection Procedure

3.16 DATA ANALYSIS PROCEDURE

The data was collected from 231 primigravida mothers from 37-42 weeks of gestational weeks during labour were coded and entered into Microsoft Excel Spreadsheet. The data was analyzed using descriptive and inferential statistics.

Descriptive statistics

- Frequency and percentage distribution to analyse the demographic variables.
- Mean and standard deviation to evaluate the maternal and newborn outcome among primigravida mothers.

Inferential statistics

- Unpaired 't' test to compare the experimental and control group of maternal and newborn outcome during labour among primigravida mothers.
- Chi-square test to associate the post test intervention of maternal and newborn outcome among primigravida mothers with selected demographic variable

SUMMARY

True experimental design was carried among 231 primigravida mothers from 37-42 weeks of gestation attending the OPD department, Annai Theresa hospital, Medavakkam, Chennai and Narayanaa hospital, Purasawalkam, Chennai by using simple random sampling technique. Visual analogue scale, Observation check list and Apgar score chart was used to assess the maternal and newborn outcome among primigravida mothers. The data was collected after obtaining the permission from concerned personnel of the hospital. Analysis was planned to do by using descriptive and inferential statistics and to be presented in the form of tables, graphs, and figures.

CHAPTER - IV

RESULTS AND ANALYSIS

The chapter deals with analysis and interpretation of data collected from the primigravida mothers to analyze the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers in experimental and control group.

Data analysis is to organize, provide structure to and elicit meaning and being with description that applies to any study in which data are numerical with some concepts. Descriptive statistics allows the research to summarize, describe the quantitative data and inferential statistics used to determine the relationship and causality.

The data were entered into Excel Sheet and analyzed through statistical package for social science / PC+ Ver. 17.

The findings of the study are organized and presented under following sections.

ORGANIZATION AND PRESENTATION OF DATA

The data collected are organized and presented under following sections.

SECTION 4.1 Description of demographic variables of primigravida mothers.

SECTION 4.2 Assess the maternal and newborn outcome among experimental and control group of primigravida mothers.

4.2.1 Frequency and percentage distribution of post test scores of pain perception during latent phase among primigravida mothers in experimental and control group.

4.2.2 Frequency and percentage distribution of post test scores of pain perception during active phase among primigravida mothers in experimental and control group

4.2.3 Frequency and percentage distribution of post test scores of pain perception during transitional phase labour among primigravida mothers in experimental and control group.

4.2.4 Area wise Analysis of maternal and newborn outcome among experimental and control group of primigravida mothers.

SECTION-4.3 To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among experimental and control group of primigravida mothers.

4.3.1- Unpaired 't' test value of post test scores of pain perception during latent, active and transitional phase of labour.

4.3.2- Unpaired 't' test value of post test scores of maternal outcome in experimental and control group of primigravida mothers.

4.3.3- Unpaired 't' test value of post test scores of Apgar score of newborn in experimental and control group .

4.3.4- Unpaired 't' test value of post test scores of newborn outcome in experimental and control group

SECTION-4.4 Find the association between post test scores of maternal and newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

4.4.1- Chi-square value of association between experimental group post test scores of maternal outcome and demographic variables of primigravida mothers.

4.4.2- Chi-square value of association between experimental group post test scores of newborn outcome and demographic variables of primigravida mothers.

4.4.3- Chi-square value of association between control group post test scores of maternal outcome and demographic variables of primigravida mothers.

4.4.4- Chi-square value of association between control group post test scores of newborn outcome and demographic variables of primigravida mothers.

SECTION 4.1: Description of samples according to their demographic variables.

Table 4.1.1 Percentage and frequency distribution of samples according to their demographic variables

N=231

S.No	Demographic variable	Experimental group (n=116)		Control group (n=115)	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
1.	**Age in Years**				
	18-20 Yrs	42	36	38	33
	21-23 Yrs	31	27	29	25
	24-26 Yrs	17	15	28	24
	27-29 Yrs	22	19	14	12
	Above 29 Yrs	4	3	6	6
2.	**Religion**				
	Hindu	78	67	62	54
	Muslim	13	11	13	11
	Christian	25	22	40	35
	Others	0	0.0	0	0.0
3.	**Education**				
	No formal Education	0	0.0	0	0.0
	Primary School	46	40	51	44
	High School	25	22	22	19
	Higher Secondary School	19	16	18	16
	Graduate & Above	26	22	24	21

Demographic profile of the participants from age point of view was found distributed with minor differences in few categories in experimental group majority 42 (36%) of primigravida mothers in the age of 18-20 years, 31 (27%) in the age group of 21-23 years. 17 (15%) in the age group of 24-26 years and 22 (19%) in the age group of 27-29 years and only 4 (3%) in the age group of above 29 years

In control group majority 38 (33%) in the age group of 18-20 years, 29 (25%) in the age group of 21 -23 years and 28 (24%) in the age group of 24-26 years and 14 (12%) in the group of 27-29 years.

Concerning with religion exhibited majority 78 (67%) and 62 (54%) belongs to Hindu, 25 (22%) and 40 (35%) were Christian and 13 (11%) were Muslim in both experimental and control group.

With regard to education, in experimental group majority 46 (40%) had educated up to primary school, 25 (22%) had educated up to high school, 19 (16%) had educated up to higher secondary and 26 (22%) were educated up to graduate. In control group majority 51 (44%) had educated up to primary school, 22 (19%) had educated up to high school, 18 (16%) were educated up to higher secondary and 24 (21%) had educated up to graduate and above.

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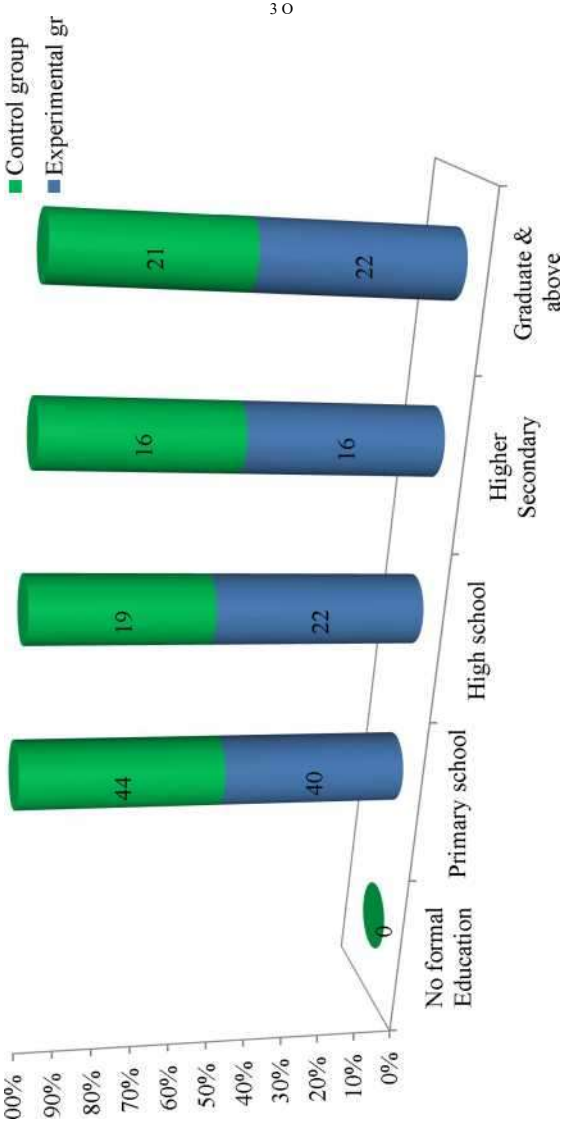
Control group
Experimental gr
00%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
44
40
19
22
16
16
21
22
0
No formal Education
Primary school
High school
Higher Secondary
Graduate & above

Table 4.1.2 Frequency and percentage distribution of samples according to their demographic variables

N=231

S.No	Demographic variable	Experimental group (n=116)		Control group (n=115)	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
1.	**Occupation**				
	a. Private /Business	29	25	33	29
	b. Government	15	13	24	21
	c. Daily Labour	39	34	26	22
	d. Homemaker	33	28	32	28
2.	**Family Income**				
	a. < Rs 10,000	35	30	46	40
	b. Rs.10,000 - Rs 15,000	50	43	37	32
	c. Above Rs 15,000	31	27	32	28
3.	**Family Type**				
	a. Nuclear	62	53	53	46
	b. Joint	54	47	62	54
	c. Extended	0	0.0	0	0.0

Distribution of demographic profile according to occupation in experimental group depicted that the majority 39 (34%) were daily labour, 33 (28%) were homemaker, 29 (25%) were private employee and 15 (13%) were government employee. In control group majority 33 (29%) were private employee, 24 (21%) were daily labour and 32 (28%) were homemaker.

While considering the family income per month in experimental group, majority 50 (43%) of them monthly income was Rs. 10,000-15,000, 35 (30%) of them monthly income was < Rs. 10,000 and 31 (27%) of them income was above Rs. 15,000 per month, whereas in control group majority 46 (40%) of them monthly income was < Rs.l0,000, 37 (32%) of

them monthly income was Rs. 10,000-Rs. 15,000 and 32 (28%) of them family income was above Rs. 15,000 per month.

Family type exhibited that the majority 62 (53%) and 53 (46%) belongs to nuclear family, 54 (47%) and 62 (54) belongs to joint family in both experimental group and control group of primigravida mothers.

Table 4.1.3 Percentage and frequency distribution of samples according to their demographic variables

N=231

S.No	Demographic variable	Experimental group (n=116)		Control group (n=115)	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
4.	**Area of living**				
	a. Urban	68	59	55	48
	b. Semi Urban	48	41	60	52
	c. Rural	0	0.0	0	0.0
5.	**Antenatal Check up**				
	a. Regular	112	97	107	93
	b. Irregular	4	3	8	7
	c. Nil	0	0.0	0	0.0
6.	**Gestational weeks**				
	a. 37-38 Weeks	0	0.0	0	0.0
	b. 39-40 weeks	115	99	107	93
	c. 41-42 Weeks	1	1	8	7
7.	**History of dysmenorrhoea**				
	a. Yes	54	47	62	51
	b. No	62	53	53	49

Distribution of demographic profile according to area of living in experimental group shown that 68(59%) were living in urban area and 48(41%) were living in semi urban area. In control group 55(48%) were living in urban area and 60(52%) were living in semi urban area.

With regard to Antenatal check up majority 112(97%) and 107(93%) had regular antenatal check up, and 4(3%) and 8(7%) had irregular antenatal check up in both experimental and control group.

Gestational weeks exhibited majority 115(99%) and 107(93%) of them belongs to 39-40weeks of gestational age and 1(1%) & 8(7%) belongs to 41-42 weeks of gestational weeks in both experimental and control group.

With respect to history of dysmenorrhoea, 54(47%) and 62(51%) had history of dysmenorrhoea in experimental group, where as in control group 62(53%) and 53(49%) had no history of dysmenorrhoea.

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SECTION 4.2 Assess the maternal and newborn outcome among primigravida mothers in experimental and control group.

Table 4.2.1 Frequency and percentage distribution of post test scores of pain perception during latent phase labour among primigravida mothers in experimental and control group.

N=231

Level of pain perception	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Mild	20	77	6	23
Moderate	86	61	54	39
Severe	10	15	55	85

With respect to level of pain perception during latent phase labour shows that in post test majority 86 (61%) of them had moderate level of pain perception, 10 (15%) of them had severe level of pain perception in experimental group whereas in control group 55 (85%) of them had severe level of pain perception and 54 (39%) of them had moderate level of pain perception among primigravida mothers.

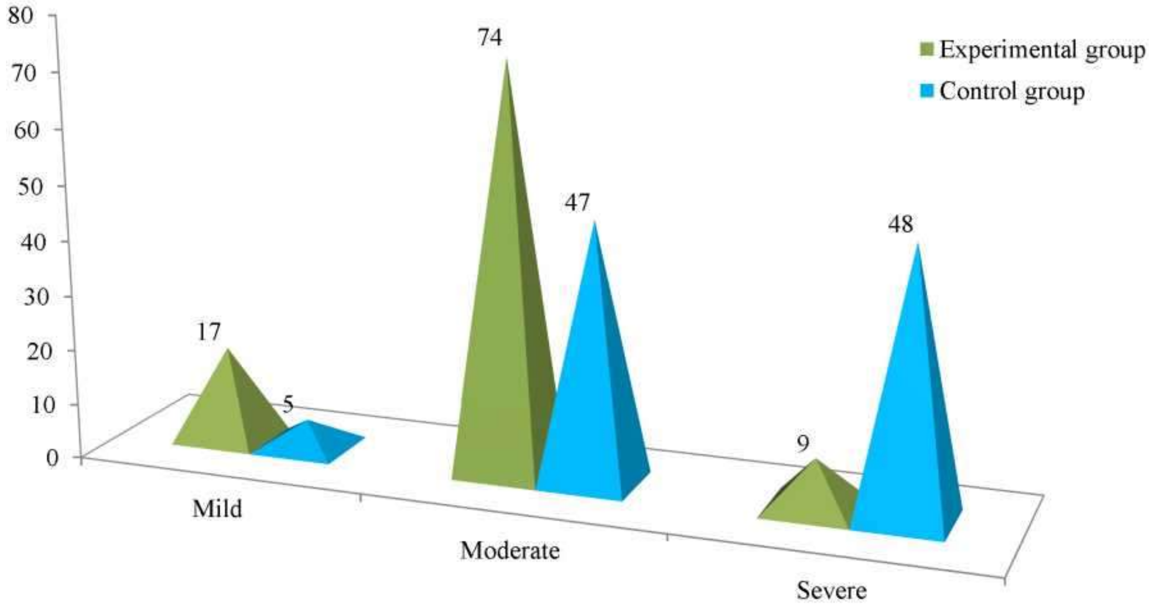

Fig 4.2.1 Bar diagram shows the frequency and percentage distribution of pain perception during latent phase among primigravida mothers in Experimental and Control group

Table 4.2.2 Frequency and percentage distribution of post test scores of pain perception during active phase of labour among primigravida mothers in experimental and control group.

N=231

Level of pain perception	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Mild	44	71	18	29
Moderate	62	56	48	44
Severe	10	17	49	83

With regards to pain perception during active phase of labour shows that 62(56%) of them had moderate level of pain perception and 44(71%) of them had mild level of pain perception in experimental group whereas in control group 49(83%) of them had severe level of pain perception and 18(29%) of them had mild level of pain perception among primigravida mothers.

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Fig 4.2.2 Bar diagram shows the frequency and percentage distribution of pain perception during active phase among primigravida mothers in Experimental and Control group

Table 4.2.3 Frequency and percentage distribution of post test scores of pain perception during transitional phase of labour among primigravida mothers in experimental and control group.

N=231

Level of pain perception	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Mild	42	72	16	28
Moderate	64	59	45	41
Severe	10	16	54	84

With respect to pain perception during transitional phase of labour only 10(16%) of them had severe level of pain perception and 64(59%) of them had moderate level of pain perception whereas in control group 54(84%) of them had severe level of pain perception and 45(41%) of them had moderate level of pain perception among primigravida mothers.

Percentage of primigravida mothers
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
14
36
39
55
47
9
Mild
Moderate
Severe
Control group
Experimental

4.2.4 Area wise analysis of maternal outcome among experimental and control group of primigravida mothers.

Table 4.2.4 Percentage and frequency distribution of post test scores of first stage labour among experimental and control group of primigravida mothers

N=231

Duration of first stage of labour	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Less than 8 hours	87	75	24	21
More than 8 hours	29	25	91	79

In experimental group, during the first stage of labour, majority 87 (75%) of primigravida mothers had less than 8 hours and 29 (25%) of primigravida mothers had more than 8 hours duration. Where as in control group 24 (21%) of them in less than 8 hours duration and majority 91 (79%) of them in more than 8 hours duration.

Table 4.2.5 Frequency and percentage distribution of post test score of duration of second stage labour among experimental and control group of primigravida mothers.

N=231

Duration of second stage of labour	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
1 to 2 hours	85	73	28	24
Above 2 hours	31	27	87	76

In experimental group, duration in second stage labour, majority 85 (73%) had 1 to 2 hours and 31 (27%) of primigravida mothers in above 2 hours duration. Where as in control group 28 (24%) in 1 to 2 hours and majority 87 (76%) in above 2 hours duration in second stage of labour.

Table 4.2.6 Frequency and percentage distribution of post test score of duration of third stage labour among experimental and control group of primigravida mothers.

N=231

Duration of third stage of labour	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Below 10 minutes	91	65	29	25
Above 10 minutes	25	35	86	75

In experimental group, majority 91 (65%) primigravida mothers had below 10 minutes and 25 (35%) of primigravida mothers in above 10 minutes duration in third stage of labour. Where as in control group 29 (25%) in below 10 minutes and majority 87 (76%) of them in above 10 minutes duration in third stage of labour.

Table 4.2.7 Frequency and percentage distribution of post test score of cervical dilatation in latent phase labour among experimental and control group of primigravida mothers.

N=231

Cervical dilation in latent phase	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
More than 4 cm	67	57	51	44
Less than 4 cm	49	43	64	56

In experimental group, majority 67 (57%) primigravida mothers had more than 4 cm and 49 (43%) of primigravida mothers had less than 4 cm cervical dilatation in latent phase of labour. Where as in control group 51 (44%) of them in more than 4 cm and majority 64 (56%) less than 4 cm cervical dilatation in latent phase of labour.

Table 4.2.8 Frequency and percentage distribution of post test score of cervical dilatation in active phase labour among experimental and control group of primigravida mothers. **N=231**

Cervical dilatation of active phase	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
More than 7 cm	70	56	46	40
Less than 7 cm	46	44	69	60

In experimental group, majority 70 (56%) had more than 7 cm and 46 (44%) of primigravida mothers in less than 7 cm in cervical dilatation in active phase of labour. Where as in control group 46 (40%) in less than 7 cm and majority 69 (60%) in less than 7 cm cervical dilatation in active phase of labour.

Table 4.2.9 Frequency and percentage distribution of post test score of cervical dilatation in transitional phase labour among experimental and control group of primigravida mothers N=231

Cervical dilatation in transitional phase	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
More than 8 cm	76	66	48	42
Less than 8 cm	40	34	67	58

In experimental group, cervical dilatation in transitional phase of labour, majority 76 (66%) had more than 8 cm and 40 (34%) of primigravida mothers in less than 8 cm in cervical dilatation. Where as in control group 48 (42%) in more than 8 cm and majority 67 (58%) in less than 8 cm.

Table 4.2.10 Frequency and percentage distribution of post test score of uterine contraction pattern in labour among experimental and control group of primigravida mothers **N=231**

Uterine contraction pattern	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Regular	91	78	32	28
Irregular	25	22	83	72

In experimental group, majority 91 (78%) had regular uterine contractions and 25 (22%) of primigravida mothers were irregular uterine contractions during labour. Where as in control group 32 (28%) in regular uterine contractions and majority 83 (72%) had irregular uterine contractions.

Table 4.2.11 Frequency and percentage distribution of post test scores of amniotic fluid status in labour among experimental and control group of primigravida mothers.

N=231

Amniotic fluid status	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Clear	92	79	28	24
Colour change	24	21	87	76

In experimental group, majority 92 (79%) had clear amniotic fluid status and 24 (21%) of primigravida mothers had colour change in amniotic fluid status in labour. Where as in control group 28 (24%) had in clear amniotic fluid status and majority 87 (76%) had colour change in amniotic fluid status.

Table 4.2.12 Frequency and percentage distribution of post test scores of fetal heart rate in labour among experimental and control group of primigravida mothers.

N= 231

Fetal heart rate	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
120-160 beats/min	69	59	35	30
Below 160 beats/min	47	41	80	70

In experimental group, majority 69 (59%) of them had the Fetal heart rate of 120 to 160 beats/min and 47 (41%) of primigravida mother's Fetal heart rate was below 160 beats/min during labour. Where as in control group 35 (30%) of had the Fetal heart rate of 120 to 160 beats/min and majority 80 (70%) had the Fetal heart rate of 160 beats/min.

Table 4.2.13 Frequency and percentage distribution of post test scores of fetal movement in labour among experimental and control group of primigravida mothers.

N=231

Fetal movement	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal	75	65	20	17
Abnormal	41	35	95	83

In experimental group, majority 75 (65%) of them had normal fetal movement and 41 (35%) of primigravida mothers had abnormal fetal movement in labour. Where as in control group 20 (17%) in normal fetal movement and majority 95 (83%) in abnormal fetal movement.

Table 4.2.14 Frequency and percentage distribution of post test scores of episiotomy wound in labour among experimental and control group of primigravida mothers.

N=231

Episiotomy wound	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Absent	69	59	51	44
Present	47	41	64	56

In experimental group, majority 69 (59%) had absence in episiotomy wound and 47 (41%) of primigravida mothers had episiotomy wound during labour. Whereas in control group 51 (44%) had absence in episiotomy wound and majority 64 (56%) had episiotomy wound.

Table 4.2.15 Frequency and percentage distribution of post test scores of perineal tear in labour among experimental and control group of primigravida mothers. N=231

Perineal tear	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Absent	64	55	55	48
Present	52	45	60	52

In experimental group, majority 64 (55%) had absence in perineal tear and 52 (45%) of primigravida mothers had perineal tear during labour. Where as in control group 55 (48%) had absence in perineal tear and majority 60 (52%) had perineal tear.

Table 4.2.16 Frequency and percentage distribution of post test scores of maternal fatigue in labour among experimental and control group of primigravida mothers.

N=231

Maternal fatigue	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Absent	88	76	54	47
Present	28	24	61	53

In experimental group, majority 88 (76%) had absence in maternal fatigue and 28 (24%) of primigravida mothers had maternal fatigue during labour. Where as in control group 54 (47%) had absence in maternal fatigue and majority 61 (53%) had maternal fatigue.

Table 4.2.17 Percentage and frequency distribution of post test value of blood loss in labour among primigravida mothers in experimental and control group.

N=231

Blood loss in labour	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Less than 300 ml	83	72	56	49
More than 300 ml	33	28	59	51

In experimental group, majority 83 (72%) had less than 300 ml blood loss in labour and 33 (28%) of primigravida mothers had more than 300 ml blood loss in labour. Where as in control group 56 (49%) had less than 300 ml blood loss in labour and majority 59 (51%) had more than 300 ml blood loss in labour.

Table 4.2.18 Frequency and percentage distribution of post test scores of mode of delivery among experimental and control group of primigravida mothers.

N=231

Mode of delivery	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal spontaneous	71	61	50	43
Assisted instrumental	45	39	66	57

In experimental group, majority 71 (61%) had normal spontaneous delivery and 45 (39%) of primigravida mothers had Assisted instrumental delivery. Where as in control group 50 (43%) had in normal spontaneous delivery and majority 66 (57%) had assisted instrumental delivery.

Table 4.2.19 Frequency and percentage distribution of post test scores of separation of placenta in labour among experimental and control group of primigravida mothers.

N=231

Separation of placenta	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal	77	66	53	46
Manual	39	34	62	54

In experimental group, majority 77 (66%) had normal separation of placenta and 39 (34%) of primigravida mothers had manual separation of placenta in labour. Where as in control group 53 (46%) had normal separation of placenta and majority 62 (54%) had manual separation of placenta.

Table 4.2.20 Frequency and percentage distribution of post test scores of bladder and bowel pattern among experimental and control group of primigravida mothers.

N=231

Bladder and Bowel pattern	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal	67	58	55	48
Difficulty	49	42	60	52

In experimental group, majority 67 (58%) had normal bladder and bowel pattern and 49 (42%) of primigravida mothers had difficulty in bladder and bowel pattern. Where as in control group 55 (48%) had normal bladder and bowel pattern and majority 60 (52%) had difficulty bladder and bowel pattern after delivery.

Table 4.2.21 Frequency and percentage distribution of post test scores of involution of uterus in labour among experimental and control group of prigravida mothers.

N=231

Involution of uterus	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Good	64	55	48	42
Poor	52	45	67	58

In experimental group, majority 64 (55%) had good involution of uterus and 52 (45%) of primigravida mothers had poor involution of uterus. Where as in control group 48 (42%) in good involution of uterus and majority 67 (58%) of them had poor involution of uterus.

Table 4.2.22 Percentage and frequency distribution of post test vital signs scores among experimental and control group of primigravida mothers.

N=231

Vital signs	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal	78	67	53	46
Abnormal	38	33	62	54

In experimental group, majority 78 (67%) had normal vital signs and 38 (33%) of primigravida mothers had abnormal vital signs. Where as in control group 53 (46%) had normal vital signs and majority 62 (54%) had abnormal vital signs.

Table 4.2.23 Frequency and percentage distribution of post test scores of conscious status among experimental and control group of primigravida mothers. **N=231**

Conscious status	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Alert and oriented	83	72	53	46
Unconscious	33	28	62	54

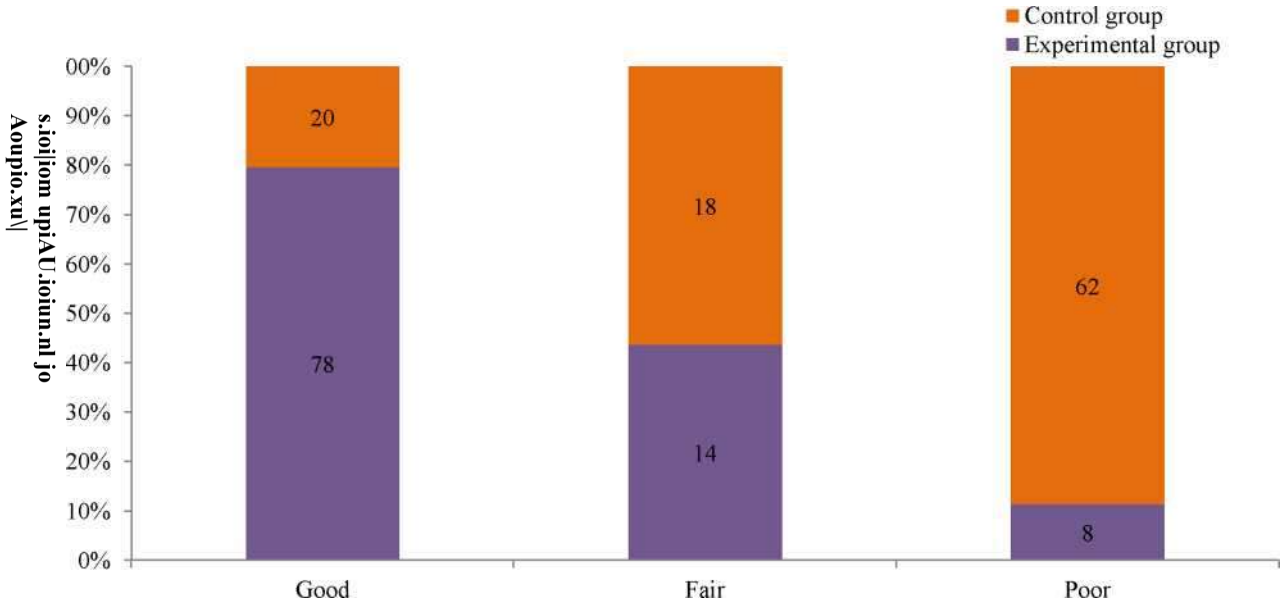
In experimental group, majority 83 (72%) had been in alert and oriented status and 33 (28%) of primigravida mothers had been in unconscious level. Where as in control group 53 (46%) had been in alert, oriented status and majority 62 (54%) in unconscious.

Table 4.2.24 Percentage and frequency distribution of post test scores of maternal outcome among experimental and control group of primigravida Mothers.

N=231

Maternal outcome	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Good	91	78	23	20
Fair	16	14	21	18
Poor	9	8	71	62

With respect to maternal outcome in experimental group of primigravida mothers, it showed that in post test majority 91 (78%) had good maternal outcome and 16 (14%) had fair outcome and only 9 (8%) had poor maternal outcome .In control group majority 71 (62%) had poor maternal outcome and only 23 (20%) had good maternal outcome among primigravida mothers.


Control group
Experimental group
00%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
20
78
18
14
62
8
Good
Fair
Poor

4.2.2. Area wise analysis of post test scores of newborn outcome among experimental and control group of primigravida mothers

Table 4.2.25 Percentage and frequency distribution of post test score of one minute APGAR score of newborn during labour among primigravida mothers in experimental and control group.

N=231

Apgar Score	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
No depression	105	91	85	74
Mild depression	11	9	30	26
Severe depression	0	0.0	0	0.0

With regard to one minute APGAR score of newborn outcome during labour showed that majority 105 (91%) had no depression and only 11 (9%) had mild depression in experimental group whereas in control group 85 (74%) had no depression and 30 (26%) newborn had mild depression among primigravida mothers.

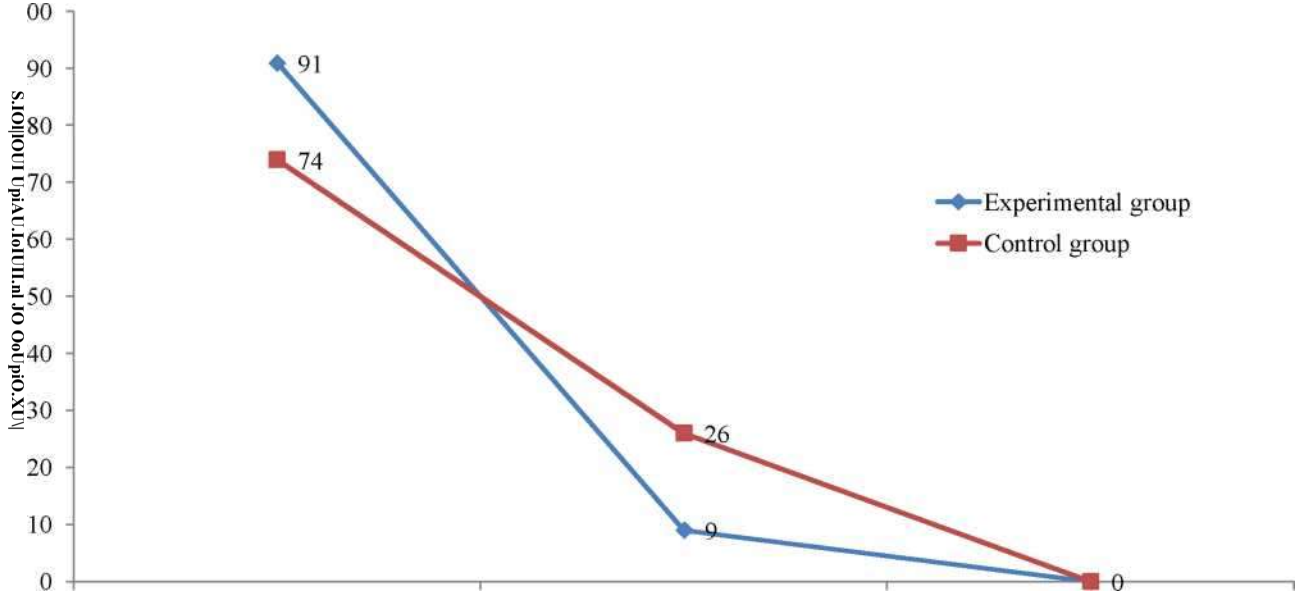

00
90
80
70
60
50
40
30
20
10
0
91
74
26
9
0
Experimental group
Control group

Table 4.2.26 Percentage and frequency distribution of post test scores of birth weight of newborn among experimental and control group of primigravida mothers.

N= 231

Birth weight	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Birth weight > 2.7 kg	92	79	47	41
Birth weight < 2.7 kg	24	21	68	59

In experimental group, majority 92 (79%) newborn's birth weight was more than 2.7 kg and 24 (21%) of primigravida mothers newborn's birth weight was less than 2.7 kg. Where as in control group 47 (41%) newborn's birth weight was more than 2.7 kg and majority 68 (59%) newborn's birth weight was less than 2.7 kg.

Table 4.2.27 Percentage and frequency distribution of post test scores of newborn warmth among experimental and control group of primigravida mothers. N=231

Warmth	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Normal	84	72	56	48
Abnormal	32	28	59	52

In experimental group, majority 84 (72%) newborn had normal warmth and 24 (21%) of primigravida mothers newborn had abnormal warmth. Where as in control group 47 (41%) had normal warmth and majority 68 (59%) had abnormal warmth.

Table 4.2.28 Percentage and frequency distribution of post test scores of newborn comfort among experimental and control group of primigravida mothers. N=231

Comfort	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Decreased crying episodes	89	77	39	34
Frequent crying	27	23	76	66

In experimental group, majority 89 (77%) newborn had decreased crying episodes and 27 (23%) of primigravida mothers newborn had frequent crying episodes. Where as in control group 39 (34%) had decreased crying episodes and majority 76 (66%) had frequent crying episodes.

Table 4.2.29 Frequency and percentage distribution of post test scores of newborn quality of attachment to the breast among experimental and control group of primigravida mothers.

N=231

Quality of attachment to breast	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Attached to the breast correctly by its own	84	72	47	41
Need assistant	32	28	68	59

In experimental group, majority 84 (72%) of newborn had attached to the breast correctly by its own and 32 (28%) of primigravida mothers newborn were in need of assistant, where as in control group 47 (41%) attached to the breast correctly by its own and majority 68 (59%) assistance.

Table 4.2.30 Percentage and frequency distribution of post test scores of newborn frequency of feeding among experimental and control group of primigravida mothers.

N=231

Frequency of feeding	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
More than 8 times in 24 hours	89	77	39	34
Less than 8 times in 24 hours	27	23	76	66

In experimental group, regarding breastfeeding frequency majority 89 (77%) newborn had more than 8 times in 24 hours and 27 (23%) of primigravida mothers newborn had less than 8 times in 24 hours. Where as in control group 39 (34%) of them had more than 8 times in 24 hours and majority 76 (66%) had less than 8 times in 24 hours.

Table 4.2.31 Percentage and frequency distribution of post test scores of passage of meconium among experimental and control group of primigravida mothers.

N=231

Passage of meconium	Experimental group (n=116)		Control group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Within 30 minutes	97	84	44	38
After 3 0 minutes	19	16	71	62

In experimental group, majority 97 (84%) newborn passed meconium within 30 minutes and 19 (16%) of primigravida mothers of newborn had passed after 30 minutes. Whereas in control group 44 (38%) newborn had passed meconium within 30 minutes and majority 71 (62%) had passed after than 30 minutes.

Table 4.2.32 Percentage and frequency distribution of post test scores of newborn outcome during labour among primigravida mothers in experimental and control group.

N=231

Newborn outcome	Post test score			
	Experimental Group (n=116)		Control Group (n=115)	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Good	99	85	49	42
Fair	6	5	18	16
Poor	11	10	48	42

With respect to newborn outcome during labour among primigravida mothers in experimental group 99 (85%) newborn had good outcome and 11 (10%) newborn had poor outcome, whereas in control group 49 (42%) newborn had good outcome and 48 (59 %) newborn had poor outcome.

Q-
Experimental group
Control group
90
80
70
60
50
40
30
20
10
0
85
42
42
16
5
10
Good
Fair
Poor
Experimental group
Control gr3
S.IOl|lOUI UpiAU.IoIUII.nl JO OoUpiO.XU\|

SECTION 4.3: To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers in experimental and control group.

Table 4.3.1 Unpaired 't' test value of post test score of pain perception during latent phase labour in experimental and control group.

Post test score					
Group	**Frequency**	**Mean**	**S.D**	**Std. Mean Error**	**'t' value**
Experimental	116	5.91	1.28	0.12	5.70***
Control	115	7.20	1.95	0.18	

In Latent phase of labour, the mean post test scores of pain perception in experimental group was 5.91 and S.D 1.28 with std mean error (0.12) whereas in control group mean score was 7.20 and S.D 1.95 with std mean error (0.18). The t value 5.70 which was greater than table value and' p' value was less than 0.001.

Table 4.3.2 Unpaired 't' test value of post test score of pain perception during active phase of labour in experimental and control group

Post test score					
Group	**Frequency**	**Mean**	**S.D**	**Std. Mean Error**	**'t' value**
Experimental	116	5.07	1.66	0.15	7.63***
Control	115	6.94	2.06	0.19	

In Active phase of labour, The mean post test scores of pain perception in experimental group was 5.07 with S.D 1.66 and std mean error score was (0.15) whereas in control group mean score was 6.94 with S.D 2.06 and std mean error score was (0.19). The t value 7.63 which was greater than table value and p value was less than 0.001.

Table 4.3.3 Unpaired 't' test value of post test score of pain perception during transitional phase of labour in experimental and control group

Post test score					
Group	**Frequency**	**Mean**	**S.D**	**Std. Mean Error**	**'t' value**
Experimental	116	5.09	1.61	0.15	8.61***
Control	115	7.2	2.08	0.19	

In Transitional phase of labour, the mean post test scores of pain perception in experimental group was 5.09, S.D 1.61 with std mean error (0.15) whereas in control group mean score was 7.2 with S.D 2.08 with std mean error (0.19). The t value 8.61 which was greater than table value and p value was less than 0.001.

Table 4.3.4 Unpaired 't' test value of post tests maternal outcome in experimental and control group.

Post test score					
Group	**Frequency (N)**	**Mean**	**S.D**	**Std. Error Mean**	**'t' value**
Experimental	116	26.97	3.29	0.31	10.69***
Control	115	31.57	3.24	0.30	

The mean post test scores of maternal outcome in experimental group was 26.97, S.D 3.29 with std mean error (0.31) whereas in control group mean score was 31.57 with S.D 3.24 with std mean error (0.30). The 't' value was 10.69 which was greater than table value and 'p' value was less than 0.001 which shows that experimental group was better than control group for maternal outcome among primigravida mothers.

Table 4.3.5 Unpaired 't' test value of post test Apgar score in experimental and control group.

Post test score					
Group	**Frequency (N)**	**Mean**	**S.D**	**Std. Error Mean**	**'t' value**
Experimental	116	5.41	2.16	0.20	3 14***
Control	115	4.54	2.07	0.19	

The mean post test Apgar score of newborn outcome in experimental group was 5.41, S.D 2.16 with std mean error 0.20 whereas in control group mean score was 4.54 with S.D 2.07 with std mean error 0.19. The 't' value was 3.14 which was greater than table value and 'p' value was less than 0.001 which shows that experimental group was better than control group for Apgar score of newborn outcome among primigravida mothers.

Table 4.3.6 Unpaired 't' test value of post tests scores of newborn outcome in experimental and control group.

Post test score					
Group	**Frequency (N)**	**Mean**	**S.D**	**S. Error Mean**	**'t' value**
Experimental	116	7.39	1.27	0.12	8.95***
Control	115	9.10	1.62	0.15	

The mean post test scores of newborn outcome in experimental group was 7.39, S.D 1.27 with std mean error (0.12) whereas in control group mean score was 9.10 with S.D 1.62 with std mean error (0.15). The 't' value was 8.95 which was greater than table value and 'p' value was less than 0.001 which shows that experimental group was better than control group for newborn outcome among primigravida mothers.

SECTION 4.4 Find out the association between post test scores of maternal and newborn outcome among primigravida mothers in experimental and control group with their selected demographic variables.

Table 4.4.1 Association between experimental group post test scores of maternal outcome and demographic variables of primigravida mothers

S. No	Demographic variables		Experimental Group(n=116) Maternal outcome							
			Good		Fair		Poor		X^2	p value
			N	%	N	%	N	%		
1	Age	a. 18-20 Yrs	33	28.45	6	5.17	3	2.59	3.05 NS	0.93
		b . 21-23 Yrs	24	20.69	5	4.31	2	1.72		
		c. 24-26 Yrs	13	11.21	2	1.72	2	1.72		
		d. 27-29 Yrs	18	15.52	3	2.59	1	0.86		
		e. Above 29 Yrs	3	2.59	0	0.00	1	0.86		
2	Religion	a. Hindu	60	51.72	11	9.48	7	6.03	3.46 INS	0484
		b. Muslim	12	10.34	0	0.00	1	0.86		
		c. Christian	19	16.38	5	4.31	1	0.86		
		d. Others	0	0.00	0	0.00	0	0.00		
3	Education	a. No formal Education	0	0.00	0	0.00	0	0.00	5.804 NS	0.445
		b. Primary School	38	32.76	6	5.17	2	1.72		
		c. High School	18	15.52	4	3.45	3	2.59		
		d. Higher Secondary School	17	14.66	2	1.72	0	0.00		
		e. Graduate & Above	18	15.52	4	3.45	4	3.45		
4	Occupation	a. Private	24	20.69	5	4.31	0	0.00	6.78 NS	0.32
		b. Government	10	8.62	4	3.45	1	0.86		
		c. Daily Labour	32	27.59	3	2.59	4	3.45		
		d. Homemaker	25	21.55	4	3.45	4	3.45		

5	Income per month	a. <Rs 10,000	28	24.14	4	3.45	3	2.59	3.42 NS	0.49
		b. Rs 10,000 - Rs 15,000	36	31.03	10	8.62	4	3.45		
		c. Above Rs 15,000	27	23.28	2	1.72	2	1.72		
6	Family	a. Nuclear	47	40.52	4	3.45	3	2.59	4.569 NS	0.102
		b. Joint	44	37.93	12	10.34	6	5.17		
		c. Extended	0	0.00	0	0.00	0	0.00		
7	Area of living	a. Urban	65	56.03	8	6.90	4	3.45	4.903 NS	0.086
		b. Semi Urban	26	22.41	8	6.90	5	4.31		
		c. Rural	0	0.00	0	0.00	0	0.00		
8	Antenatal check up	a. Regular	84	72.41	14	12.07	9	7.76	4.29 NS	0.37
		b. Irregular	4	3.45	0	0.00	0	0.00		
		c. Nil	3	2.59	2	1.72	0	0.00		
9	Gestational weeks	a. 37-38 weeks	0	0.00	0	0.00	0	0.00	0.66 NS	0.72
		b. 39-40 weeks	90	77	16	14	9	7.8		
		c. 41 -42 weeks	1	0.9	0	0.00	0	0.00		
10	History of dysmenorrhoea	a. Yes	44	37.93	6	5.17	4	3.45	0.66 NS	0.72
		b. No	47	40.52	100	8.62	5	4.31		

p>0.05 NS-Not Significant

Experimental group revealed that no association between post test maternal outcome scores and age(X^2 =3.05), religion(X^2 =3.461), education(X^2 =5.804), occupation(X^2 =6.78), income(X^2 =3.42), family type(X^2=4.569), area of living(X^2 =4.903), antenatal check up(X^2 =4.29)gestational weeks(X^2=0.66) and history of dysmenorrhoea(X^2= 0.66) when compared to evidence no significance with (p>0.05).

Table 4.4.2 Association between control group post test scores of maternal outcome and demographic variables of primigravida mothers.

S. No	Demographic variables		Control Group (n=115) Maternal outcome							
			Good		Fair		Poor		X^2	p value
			N	%	N	%	N	%		
1	Age	a. 18-20 Yrs	10	8.70	5	4.35	23	20.00	11.18 NS	0.19
		b. 21-23 Yrs	4	3.48	4	3.48	21	18.26		
		c. 24-26 Yrs	6	5.22	10	8.70	12	10.43		
		d. 27-29 Yrs	2	1.74	2	1.74	10	8.70		
		e. Above 29 Yrs	1	0.87	0	0.00	5	4.35		
2	Religion	a. Hindu	13	11.30	12	10.43	37	32.17	2.07 NS	0.72
		b. Muslim	1	0.87	5	4.35	7	6.09		
		c. Christian	9	7.83	4	3.48	27	23.48		
		d. Others	0	0.00	0	0.00	0	0.00		
3	Education	a. No formal Education	0	0.00	0	0.00	0	0.00	11.33 NS	0.18
		b. Primary School	9	7.83	11	9.57	31	26.96		
		c. High School	6	5.22	1	0.87	15	13.04		
		d. Higher Secondary School	5	4.35	3	2.61	10	8.70		
		e. Graduate & Above	3	2.61	6	5.22	15	13.04		
4	Occupation	a. Private	6	5.22	6	5.22	21	18.26	8.13 NS	0.28
		b. Government	6	5.22	1	0.87	17	14.78		
		c. Daily Labour	7	6.09	4	3.48	15	13.04		
		d. Homemaker	4	3.48	10	8.70	18	15.65		

5	Income per month	a. < Rs 10,000	12	10.43	5	4.35	29	25.22	11.92*	0.02
		b. Rs 10,000 - Rs 15,000	7	6.09	4	3.48	26	22.61		
		c. Above Rs 15,000	4	3.48	12	10.43	16	13.91		
6	Family type	a. Nuclear	12	10.43	11	9.57	39	33.91	4.06 NS	0.48
		b. Joint	11	9.57	10	8.70	32	27.83		
		c. Extended	0	0.00	0	0.00	0	0.00		
7	Area of living	a. Urban	14	12.17	13	11.30	58	50.43	3.33 NS	0.50
		b. Semi Urban	9	7.83	8	6.96	13	11.30		
		c. Rural	0	0.00	0	0.00	0	0.00		
8	Antenatal check up	a. Regular	19	16.52	18	15.65	64	55.65	10.01*	0.04
		b. Irregular	4	3.48	0	0.00	4	3.48		
		c. Nil	0	0.00	3	2.61	3	2.61		
9	Gestational weeks	a. 37-38 weeks	0	0.00	0	0.00	0	0.00	8.43 NS	0.08
		b. 39-40 weeks	21	18.3	18	15	68	59		
		c. 41-42 weeks	2	1.74	3	2.61	3	2.61		
10	History of dysmenorrhoea	a. Yes	10	8.70	13	11.30	36	31.30	1.52 NS	0.47
		b. No	13	11.30	8	6.96	35	30.43		

P<0.05 NS-Not Significant

Above table depicts that there is significant association found between control group maternal outcome post test scores with income (X^2 =11.92), and antenatal check up (X^2 =10.01) among primigravida mothers (p <0.05). And no significant association found between control group post test scores of maternal outcome among primigravida mothers, when compared to age (X^2 =11.18), religion (X^2 =2.07), education (X^2 =11.33), occupation(X^2 =8.13), family type (X^2=4.06), area of living (X^2 =3.33), gestational weeks(X^2=8.43) and history of dysmenorrhea (X^2= 1.52) (p>0.05)

Table 4.4.3 Association between experimental group post test scores of newborn outcome and demographic variables of primigravida mothers

S. No	Demographic variables		Experimental Group (n=116) Newborn outcome							
			Good		Fair		Poor		X^2	P value
			N	%	N	%	N	%		
1	Age	a. 18-20 Yrs	35	30.17	2	1.72	5	4.31	5.97 NS	0.65
		b. 21-23 Yrs	26	22.41	2	1.72	3	2.59		
		c. 24-26 Yrs	14	12.07	1	0.86	2	1.72		
		d. 27-29 Yrs	21	18.10	0	0.00	1	0.86		
		e. Above 29 Yrs	3	2.59	1	0.86	0	0.00		
2	Religion	a. Hindu	21	18.10	50	43.10	7	6.03	3.41 NS	0.491
		b. Muslim	5	4.31	8	6.90	0	0.00		
		c. Christian	8	6.90	13	11.21	4	3.45		
		d. Others	0	0.00	0	0.00	0	0.00		
3	Education	a. No formal Education	0	0.00	0	0.00	0	0.00	11.16 NS	0.084
		b. Primary School	16	13.79	27	23.28	3	2.59		
		c. High School	9	7.76	16	13.79	0	0.00		
		d. Higher Secondary School	3	2.59	11	9.48	5	4.31		
		e. Graduate & Above	6	5.17	17	14.66	3	2.59		
4	Occupation	a. Private	23	19.83	0	0.00	6	5.17	10.42 NS	0.11
		b. Government	13	11.21	2	1.72	0	0.00		
		c. Daily Labour	34	29.31	3	2.59	2	1.72		
		d. Homemaker	29	25.00	1	0.86	3	2.59		

S. No	Demographic variables		Experimental Group (n=116) Newborn outcome							
			Good		Fair		Poor		X^2	P value
			N	%	N	%	N	%		
5	Income per month	a. < Rs 10,000	31	26.72	1	0.86	3	2.59	2.44 NS	0.66
		b. Rs 10,000 - Rs 15,000	42	36.21	2	1.72	6	5.17		
		c. Above Rs 15,000	26	22.41	3	2.59	2	1.72		
6	Family	a. Nuclear	17	14.66	32	27.59	5	4.31	0.23 NS	0.891
		b. Joint	17	14.66	39	33.62	6	5.17		
		c. Extended	0	0.00	0	0.00	0	0.00		
7	Area of living	a. Urban	23	19.83	48	41.38	6	5.17	0.76 NS	0.683
		b. Semi Urban	11	9.48	23	19.83	5	4.31		
		c. Rural	0	0.00	0	0.00	0	0.00		
8	Antenatal check up	a. Regular	92	79.31	5	4.31	10	8.62	5.56 NS	0.24
		b. Irregular	2	1.72	1	0.86	1	0.86		
		c. Nil	5	4.31	0	0.00	0	0.00		
9	Gestational weeks	a. 37-38 weeks	0	0.00	0	0.00	0	0.00	0.91 NS	0.92
		b. 39-40 weeks	98	84.5	6	5.2	11	9.4		
		c. 41-42 weeks	1	0.86	0	0.00	0	0.00		
10	History of dysmenorrhoea	a. Yes	45	38.79	3	2.59	6	5.17	0.36 NS	0.84
		b. No	54	46.55	3	2.59	5	4.31		

p>0.05 NS-Not Significant

Experimental group determined that no significant association between post test scores of newborn outcome among primigravida mothers when compared to age (X^2 =5.97), religion (X^2 =3.41), education (X^2 =11.16), occupation (X^2 =10.42), income (X^2 =2.44), family type (X^2=0.23), area of living (X^2 =0.76), antenatal check up (X^2=5.56) gestational weeks (X^2=0.91) and history of dysmenorrhea (X^2= 0.36) (p>0.05).

S. No	Demographic variables		Control Group (n=115) Newborn outcome							
			Good		Fair		Poor		X^2	P value
			N	%	N	%	N	%		
1	Age	a. 18-20 Yrs	17	14.78	7	6.09	14	12.17	11.94 NS	0.15
		b. 21-23 Yrs	11	9.57	7	6.09	11	9.57		
		c. 24-26 Yrs	13	11.30	1	0.87	14	12.17		
		d. 27-29 Yrs	3	2.61	3	2.61	8	6.96		
		e. Above 29 Yrs	5	4.35	0	0.00	1	0.87		
2	Religion	a. Hindu	2	1.74	28	24.35	32	27.83	6.64 NS	0.156
		b. Muslim	0	0.00	8	6.96	5	4.35		
		c. Christian	1	0.87	28	24.35	11	9.57		
		d. Others	0	0.00	0	0.00	0	0.00		
3	Education	a. No formal Education	0	0.00	0	0.00	0	0.00	3.07 NS	0.8
		b. Primary School	1	0.87	30	26.09	20	17.39		
		c. High School	1	0.87	10	8.70	11	9.57		
		d. Higher Secondary school	1	0.87	11	9.57	6	5.22		
		e. Graduate & Above	0	0.00	13	11.30	11	9.57		
4	Occupation	a. Private	12	10.43	5	4.35	16	13.91	3.15 NS	0.79
		b. Government	10	8.70	4	3.48	10	8.70		
		c. Daily Labour	11	9.57	6	5.22	9	7.83		
		d. Homemaker	16	13.91	3	2.61	13	11.30		
5	Income per month	a. < Rs 10,000	21	18.26	9	7.83	16	13.91	2.14 NS	0.71
		b. Rs 10,000 - Rs 15,000	16	13.91	5	4.35	16	13.91		
		c. Above Rs 15,000	12	10.43	4	3.48	16	13.91		

S. No	Demographic variables		Control Group (n=115) Newborn outcome						X^2	P value
			Good		Fair		Poor			
			N	%	N	%	N	%		
6	Family	a. Nuclear	1	0.87	32	27.83	29	25.22	1.72 NS	0.423
		b. Joint	2	1.74	32	27.83	19	16.52		
		c. Extended	0	0.00	0	0.00	0	0.00		
7	Area of living	a. Urban	3	2.61	47	40.87	35	30.43	1.09 NS	0.58
		b. Semi Urban	0	0.00	17	14.78	13	11.30		
		c. Rural	0	0.00	0	0.00	0	0.00		
8	Antenatal check up	a. Regular	45	39.13	14	12.17	42	36.52	7.30 NS	0.12
		b. Irregular	2	1.74	1	0.87	5	4.35		
		c. Nil	2	1.74	3	2.61	1	0.87		
9	Gestational weeks	a. 37-38 weeks	0	0.00	0	0.00	0	0.00	2.19 NS	0.7
		b. 39-40 weeks	47	41	16	13.9	44	38.2		
		c. 41-42 weeks	2	1.74	2	1.74	4	3.48		
10	History of dysmenorrhoea	a. Yes	26	22.61	11	9.57	22	19.13	1.33 NS	0.54
		b. No	23	20.0	7	6.09	26	22.61		

p>0.05 NS-Not Significant

Experimental group determined that no significant association between post test scores of newborn outcome among primigravida mothers when compared to age (X^2 =11.94), religion (X^2 =6.64), education (X^2 =3.07), occupation (X^2 =3.15), income (X^2 =2.14), family type (X^2=1.72), area of living (X^2 =1.09), antenatal check up (X^2=7.30) gestational weeks (X^2=2.19) and history of dysmenorrhea (X^2=1.33) (p>0.05).

CHAPTER - V

DISCUSSION

The present study was executed to evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers at selected hospitals. A true experimental design was adopted for the study and the sample was selected by using simple random sampling method . Sample size were 231 primigravida mothers from 37-42 weeks of gestation from two private hospitals. The selected nursing intervention was implemented to the primigravida mothers during labour. Post test level of pain perception and maternal and newborn outcome was assessed by using visual analogue scale and observational check list. The results of the study had proved that there was a significant difference was found in maternal and newborn outcome among experimental and control group of primigravida mothers after administering the selected nursing intervention.

The conceptual framework based on Ernesstine widen Bach's helping art theory was applied in the present study. The pre model for selected nursing interventions during labour helped the researcher to introduce the promotion of maternal and newborn outcome through slow-paced breathing exercise, sacral massage, position changes and breast crawl technique. The theory supported the researcher in planning and executing the present study in phased manner.

The findings are discussed objective wise and presented below:

Description of demographic variables of the Primigravida mothers in experimental group and control group

- Most (36%) and (33%) Primigravida mothers were in the age group of 18-20 years in experimental and control group. And (27%) primigravida mothers were in the age group of 21-33 years in experimental group, whereas (25%) of primigravida mothers were in the same age group in control group. These results agreed with another study which found that there was a trustworthy evidence of the effectiveness of several techniques that might be used during labour, increasing parturient comfort. The study data shows that (30%) participants were in the age group of 18-20 years in experimental group, and (40%) of them in control group.[57]

  In current study majority 78 (67%) and 62(54%) of primigravida mothers belonged to Hindu in experimental and control group. This result agreed with another study found that during labour, majority of women experience severe pain and distress; of Course, she could also help herself to make her labour & delivery easier. Most of the women (60%) belongs to Hindu religion, whereas (31.7&) and (8.3%) belonged to Muslim and Christian religion.[98] Another study also found that 15(50%) belonged to Hindu in experimental group and (18.60%) belonged to Hindu in Control group.[57]

  With respect to education majority 46(40%) and 51(44%) of Primigravida mothers had primary school level, and 25(22%) and 22(19%) had up to high school, and 19(16%) and 18(16%) of them educated up to higher secondary, and 26(22%) and 24(21%) had graduation and none of them had no formal education in both

experimental and control group. Another study also found that (50%). 42% of the mothers had primary education, and (25%) &(17%) had high school education in both experimental and control group of Primigravida mothers.[57]

The findings of this study found that majority 39(34%) of primigravida mothers were in daily labour in experimental group. In control group 33(29%) were private employee 33(28%) and 32(28%) of primigravida mothers were homemaker in experimental and control group. These results agreed with another study found that in India most of the women (38%) were housewives whereas some (11.6%) in service.[98]

The current study results that (43%) of monthly family income Rs. 10,000/-, Rs. 15,000/- and 40% of family income < Rs. 10,000/- in experimental and control group. 27% and 28% of Primigravida mothers family income above Rs. 15,000/- per month in both experimental and control group. The another study also found that majority of the women (83.33%) had monthly income between Rs 3001-6,000 where as only a few (10%) had the income between Rs.6001-9000 respectively.[58]

The findings of this study suggested that 53% and 46% of Primigravida mothers belongs to nuclear family and 47% and 54% of them belongs to joint family in both experimental and Control group. Another study result found that 73% of women belonged to joint family and 27% of women belonged to nuclear family in experimental group.[98]

The findings revealed that study 59% & 48% of Primigravida mothers living in the urban area in experimental and control group. 41% and 52% in semi urban area, in both experimental and control group, another study revealed that 37% of mothers live in urban area , 50% of primigravida mothers live in semi urban area and rest 4(13%)

in rural area.[91]

The results of this study shows that majority 97% & 93% of primigravida mothers had regular antenatal check up in both experimental and control group ,the another study result shows that (9.1%) of them attending childbirth classes and (69%) attending the prenatal visits.[92]

- The current study results found that, 99% and 93% of primigravida mothers belonged to 39-40 weeks of gestation in experimental and control group. The another, study result found that massage reduces the pain level during labour showed that in relation to gestational age of mother, 57% belonged to 37-40 weeks of gestation.[91]

The first objective was to assess the maternal and newborn outcome in experimental and control group among primigravida mothers.

Frequency and percentage distribution of post test scores of pain perception during latent, active and transitional phase of labour among primigravida mothers in experimental and control group.

In experimental group, out of 116 subjects, majority 86(74%) had moderate level of pain perception in latent phase, 44(38%) had mild level of pain perception and only 10(9%) had severe level of pain perception in transitional phase of labour whereas in control group 55(48%) had severe level of pain perception in latent phase and 48(43%) had moderate level of pain perception in active phase of labour.

The current result agreed with another study suggested that the intervention group received a breathing exercise in active phase of delivery at a rate of 45 minutes interval of 3 times during uterine contraction and the non-intervention group received normal routine care. The level of pain perception and stress level was measured with wong weber's facial pain scale

and behavioural checklist after the each uterine contraction. The study results revealed that there was a significant improvement found in mean score of stress and pain level in the intervention and non-intervention group($p<0.001$).[56]

The findings from another study result shows that the mean score of pain severity during first stage labour was significantly different between the experimental and control group, at the start of active phase ($p=0.009$), end of transitional phase ($p=0.014$) and end of first stage ($p=0.01$).[64]

The findings of result from another study shows that the determination of pain level during the late latent phase and early active phase of first phase of delivery suggested that statistically significant difference found in experimental group than the control group ($p<0.01$) .The investigator also absorbed in the duration of first stage of labour with mean duration (8 hours , 48 minutes) in experimental group as compared to control group(9 hours, 48 minutes) showed statistically significant difference($p<0.01$).The mean duration of second stage of labour was also significantly less ($p<0.01$) ie 24 minutes in experimental group as compared to 32 minutes in control group. [23]

Frequency and percentage distribution of post test scores of maternal outcome among primigravida mothers in experimental and control group

In experimental group, maternal outcome 91(78%) had good outcome, 16(14%) had fair outcome and in control group 23(20%) had good outcome and majority 71(62%) had poor outcome.

The findings agreed with another study, a midwife , who provided continuous support consisting of praise, encouragement, comfort measures during labour showed a reduction in duration of labour, reduced use of medications for pain relief and operative vaginal delivery.[93]

The findings coincide with another study of breast crawl mothers, revealed that 1.95% had early expulsion of placenta,96% had decrease in uterine size and 93% had no anaemia in postpartum period. Breast crawl had very beneficial effect on health of mother by preventing anaemia, PPH, breast feeding failure and sense of wellbeing.[86]

Frequency and percentage distribution of one minute Apgar score of newborn among primigravida mothers in experimental and control group

In experimental group regarding one minute Apgar score, 105(91%) newborn had no depression whereas in control group 30(26%) newborn had mild depression and none of newborn had severe depression.

The current study agreed with another study, PRI (Pain Rating Index) was different between studied group after intervention ($p<0.001$). The length of active phase of labour was different and significant between two groups. The difference between the first minute and fifth minute Apgar score ($p<0.001$) ($p=0.02$) was significant.[94]

These result coincided with another study revealed that only one women (25%) had prolonged labour, in the massage therapy group, two of them (5%) had caesarean section and only one (2.5%) newborn had an Apgar score lower than 7.Study results were concluded that massage and breathing technique reduces the pain perception, reduced duration of labour and promotes maternal outcome including Apgar score.[22]

Frequency and percentage distribution of newborn outcome among primigravida mothers in experimental and control group

In experimental group newborn outcome 99(85%) newborn had good outcome, and 11(10%) had poor outcome.

The findings agreed with another study revealed that each baby after birth and after the cord cut off and who satisfied the inclusion criteria had been randomized into either the breast crawl group, had a significant positive impact on the onset of lactation ($p<0.05$) as well as extent of neonatal weight loss on day 3 ($p<0.001$). so breast crawl as a method of early initiation for breastfeeding promotes good newborn outcome[79]

The current study results accepted with another study stated that newborn's of early initiation of breast feeding through breast crawl had significant improvement in newborn outcome which includes, prevention of hypothermia, early protection from infections, and achieves effective feeding skills faster.[88]

The current results besides with another study stated that there was significant difference found between the experimental and control group in the third stage of labour duration, complete placental separation and immediate contraction of uterus and no evidence of excessive blood loss. The mean duration of third stage of labour in the experimental group was significantly shorter (2.8 minutes) than control group (11.22 minutes). The skin-to-skin contact and breast crawl were very effective during third stage labour.[84]

The current study result agreed with another study revealed that the first breast feed was 26.25% more successful in skin-to -skin contact group (58.8%) and control group (32.5%) with p value of 0.001 greater than table value. The level of satisfaction was high in experimental group than control group. The results found that there was a significant improvement in experimental and control group.[85]

The Second objective was evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among experimental and control group of Primigravida mothers.

't' test value of post test pain perception:-

- Equating the 't' test value for pain perception scores evidenced distinct clinical significance (p<00.05) with latent phase, (5.70), active phase (7.63) and transitional phase of labour (8.61) among Primigravida mothers in experimental group (p<0.05). The current results agreed with another study observed that the 't' value was (4.5) highly significant at p<0.001 level

  Another study stated that there was a significant difference found in effectiveness of selected nursing measures on labour outcome among
  Primigravida mothers. In experimental group, the investigator assessed the level of pain perception after received selected nursing measures, the results revealed that there was a highly significant difference found in pain levels at all stages of labour and the 't' value was (5.2) highly significant at (p<0.05). The selected nursing measures found more effective in experimental group than control group.[95]

- The current study result agreed with another study showed that there was a significant difference between mean pain score of experimental group and control group (p<0.001). Null hypotheses is rejected at 0.005 level of significance. The results concluded that breathing exercise was effective in reducing the intensity of pain during labour[56]

t test value of post test scores of maternal outcome in experimental group

The 't' test value of post test experimental group maternal outcome scores (10.69) evidenced distant clinical significance (p<0.05) than control group.

The current result besides with another study reported that the selected nursing measures of intervention had been administered by researcher to the experimental group. Pre-assessment level of outcome was evaluated in both experimental and control group. Post test was done without administering the nursing measures for the control group. In the experimental group, the investigator assessed the level of first stage of labour to third stage of labour was assessed for labour outcome using a structured observational record sheet, The study revealed that the 't' value of labour outcome score 7.23, which was highly significant ($p<0.05$) than control group. It seems that, nursing measures intervention was effective in improvement of labour (or) maternal outcome.[96]

The another study results showed that calculated t value in first stage duration (5.257), second stage duration (2.781), cervical dilatation (5.438) was greater than table value (2.042) and in type of delivery 75% underwent normal vaginal delivery. It showed that there was a significant improvement in maternal outcome after the selected nursing intervention.

t test value of post test scores of one minute Apgar score of newborn in experimental group.

The 't' test value of post test scores of Apgar score of newborn (3.14), Significant ($p<0.05$) in control group among Primigravida mothers.

The similar study coincided with the massage receiving group newborn Apgar scores at one minute and 5 minutes among experimental group was improved

significantly than the control group ($p<0.0001$). The results of this study revealed that administering massage therapy during labour helps to decrease the duration and improve Apgar scores at the first and fifth minutes.[61]

t test value of post test scores of newborn outcome in experimental group

Compatible't' test value of post test scores of newborn outcome (8.95) significant ($p<0.05$) with experimental group than control group.

The current result besides with another study that continuous support during labour by an experienced women reduced significantly the length of labour, no need for pain medications and better newborn outcome and strong as standard infants. It seems that continuous support during labour was effective in improvement of newborn outcome. [93]

The another study result showed that the sensitive period during the first hour (or) immediately after birth is significantly influenced by elevated levels of the maternal reproductive hormone, oxytocin which promotes maternal and newborn attachment, reduces newborn stress and helps the newborn transition to postnatal life was significant($p<0.005$).[97]

The third objective was to find out the association between post test scores of maternal outcome among experimental and control group of primigravida mothers with their selected demographic variables.

Association between experimental group post test scores of maternal outcome and demographic variable of the primigravida mothers.

Experimental group revealed that no association between post test scores and age ($x^2=3.05$), religion ($x^2=3.461$) education ($x^2=5.804$), occupation ($x^2=6.78$), Income per month ($x^2=3.42$) family type ($x^2=4.569$), area of living ($x^2=4.903$) Antenatal

check up ($x^2=4.29$) gestational weeks ($x^2=0.66$) and history of dysmenorrhoea ($x^2=0.66$) when compared to evidenced significance ($p<0.05$)

The current result contracted with another study found that there was no significant association between the maternal outcome post test scores with their selected demographic variables of primigravida mothers."

Association between control group post test scores of maternal outcome and demographic variables of primigravida mothers.

Control group determined that no association between post test maternal outcome and age (X^2=ll.l8) religion (X^2=2.07) education (A^2=11.33) occupation (A^2=8.13) family type (X^2=4.06), Area of living (X^2=3.33) gestational weaker (8.43) and history of dysmenorrhoea (A =1.52) when compared to evidenced significance with (p< 0.05).

Association was analyzed between post test maternal outcome score and income per month (X^2=11.92) and antenatal check up (X^2=10.01) when compared to evidenced significance with (p<0.05).

The current result accepted with another study found that there was significant association between post test scores of the maternal outcome and demographic variable of primigravida mothers.(p<0.05)[22]

The fourth objective was to find out the association between post test scores of newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

Association between experimental group post test scores of newborn outcome and demographic variables of Primigravida mothers.

Experimental group revealed that no association between post test newborn outcome score and age (X^2=5.97), religion (X^2=3.41), education (X^2=ll.l6), occupation (X^2=10.42), income per month (X^2=2.44), family type (X^2=0.23) area of living (X^2=0.76), antenatal check up (X^2=5.56), gestational weeks (X^2=0.91) and history of dysmenorrhoea (X^2=0.36), when compared to evidenced significance with (p<0.05).

The current result accepted with another study found that there was no significant association between post test newborn outcome score with demographic variables such as age (X^2=0.0213),

religion (X^2=5.99) and occupation (X^2=5.99)

Association between control group post test scores of newborn outcome and demographic variables of Primigravida mothers.

Control group revealed that no association between post test newborn outcome score and age (X^2=11.29), religion (X^2=6.64), education (X^2=3.07), occupation (X^2=3.15) income per month (X^2=2.14) family type (X^2=1.72), area of living (X^2=1.09), Antenatal check up (X^2=7.30), gestational weeks (X^2=2.19) and history of dysmenorrhoea (X^2=l .33) when compared to evidenced significance with ($p<0.05$)

The current results coincided with another study found that there was no association between post test newborn score with demographic variables such as religion (x^2=3.20) and income (x^2=1.02)

The above discussion clearly represents that there has been a statistically significant difference in effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers.

The conclusion of the study stated that selected nursing interventions of slow -paced breathing exercise, sacral massage, position changer and breast crawl technique

could be used as effective measures in the Primigravida mothers to reduce the pain level, and improve the maternal and newborn outcome during labour.

Hence research hypothesis (RH) stated that there is a significant association between post test scores of maternal and newborn outcome among experimental and control group of primigravida mothers with their demographic variables was rejected.

The conceptual frame work for the study based on widenbach's helping Art clinical Nursing Theory which directs action toward an explicit goal. This enabled the researcher to appreciate the overall research process, design her research and analysis of research findings .

In this model, the researcher could bring reduced level of pain reception, and promotes good maternal and newborn outcome in primigravida mothers through a several series of stages through an intervention strategy.

This chapter dealt with discussion based on objectives of the study, hypothesis relevant consistent literature to support the study findings and utility of conceptual framework.

Next chapter will be focussed on summary conclusion, implications, recommendations and limitation.

CHAPTER - VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS.

The aim of the present study was to assess the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers at selected hospitals.

6.1 SUMMARY

Child birth is considered by women as a most painful experience of their life parturient need self - control to face that anxious moment in their life, specifically in developing countries of India.

Mothers should be helped by the health professionals by giving them suitable non pharmacological therapies and psychological support during the time of labour. In modern world, there is a trend to use non pharmacological pain relief methods like breathing and relaxation exercises, massage and various upright positions during labour minimise the labour pain and promotes obstetrical outcome.

There were many different comfort measures such as position changes, massage, relaxation techniques and breathing exercises can be used during labour. They can help to reduce pain and stress, promote labour progress and give more control over the pain experience. These techniques can be used alone (or) with pain medication. Each birth experience is different, the length and discomfort level of each birth experience will vary. Non pharmacologic approaches towards the control of labour pain and prevention of suffering are major concerns of clinicians and their clients.

This show that need for Non- pharmacological methods of selected nursing interventions to reduce pain on awareness regarding labour outcome and intrapartum use of comfort measures. Hence nurses should be in the ideal position to provide breathing exercise,

massage, position changes and breast crawl to promote maternal and newborn outcome in various health care settings.

The problem selected for the present study was “effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers at selected hospitals, Tamil Nadu”.

The objectives of the study were

1. To assess the maternal and newborn outcome in experimental and control group among primigravida mothers.
2. To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mother.
3. To find out the association between maternal outcome among primigravida mothers with their selected demographic variables.
4. To find out the association between newborn outcome among primigravida mothers with their selected demographic variables.

The research hypotheses formulated for the present study:

Level of significance at 0.05

RHi: There is a significant difference in effectiveness of selected nursing intervention on maternal outcome among primigravida mothers in experimental and control group.

RH2: There is a significant difference in effectiveness of selected nursing intervention on newborn outcome among primigravida mothers in experimental and control group.

RH3: There is a significant association between post test scores of maternal outcome among experimental and control group of primigravida mothers with their selected demographic variables.

RH4: There is a significant association between post test scores of newborn outcome among experimental and control group of primigravida mothers with their selected demographic variables.

The researcher formulated the following assumption for the study,

1. Labour is the most painful experience for all primigravida mothers.
2. Slow-paced breathing exercise, sacral massage, position changes and breast crawl technique have an impact during labour to reduce pain and promote good maternal and newborn outcome.
3. Primigravida mothers require complementary alternative therapies during labour to improve the obstetrical outcome and quality of life.

The conceptual framework for the present study was based on Ernestine Wieden Bach's helping art theory which guides the investigator to provide the selected nursing intervention of slow - paced breathing exercise, sacral massage, position changes and breast crawl technique on improving maternal and newborn outcome.

True experimental design was adopted for the study. The independent variable were slow- paced breathing exercise, sacral massage, position changes and breast crawl technique and the dependent variable was maternal and newborn outcome among

primigravida mothers. The study was conducted in Annai Theresa Hospital, Medavakkam, Chennai, and Narayanaa Hospital, Purasawalkam, Chennai,

A Simple random sampling technique was adopted for the study. Sample size comprised of 231 primigravida mothers from 37- 42 weeks of gestation was selected as sample. The sample size was estimated by power analysis. Visual analogue scale, Apgar score chart, and observational checklist was used to evaluate the maternal and newborn outcome after the selected intervention among primigravida mothers. The tools were validated by various experts. The pilot study revealed that the tools and intervention were reliable.

The identified Primigravida mothers from 37-42 weeks of gestation were taught to practice slow- paced breathing exercise to be continue, till the end of first stage labour during uterine contraction. Sacral massage, position changes and breast crawl were administered during intrapartum period and follow-up done for 24 hours, after delivery.

The investigator considered and followed the ethical principles preceding the investigation. The investigator adhered to the human rights, principles of beneficences, non Maleficience dignity and confidentiality.

Frequency and percentage was used to analyze the demographic variables. Mean, standard deviation, standard error mean was used to evaluate the maternal and newborn outcome. Unpaired ‘t’ test was used to compare the experimental and control group of maternal and newborn outcome during labour. Chi square was used to find out the association between post test scores of maternal and newborn outcome among primigravida mothers with their demographic variables.

The major findings of the study were:-

I. Findings related to the maternal and newborn outcome among experimental and control group of primigravida mothers.

In experimental group

- In post test majority 74% of primigravida mothers had moderate level of pain perception during latent phase of labour.
- In post test active phase of labour only 9% of primigravida mothers had severe level of pain perception.
- In post test transitional phase of labour 36% of primigravida mothers had mild level of pain perception and only 9% of then had severe level of pain perception.
- In post test maternal outcome majority 80% of primigravida mothers had good maternal outcome.
- With regards to one minute APGAR score 55% of them newborn had no depression and 26% of them had mild depression.
- In post test newborn outcome majority 67% had good outcome and 25% of them newborn had fair outcome.

II. Findings related to the effectiveness of selected nursing interventions among primigravida mothers in experimental and control group

The effectiveness of selected nursing intervention on maternal and newborn outcome was tested by using mean, standard deviation, standard error mean and unpaired t test. The findings shows that

***In experimental group**

*t test value for pain perception during latent phase of labour was 5.70($p<0.05$ significant)

*t test value for pain perception during active and transitional phase of labour was 7.63($p<0.05$ significant) and 8.61($p<0,005$ significant)

*t test value for maternal outcome was 10.69 ($p<0.05$ significant)

*t test value for Apgar score was

*t test value for newborn outcome was 3.14 ($p<0.05$ significant)

III. Findings related to the association between the post test scores of maternal and newborn outcome among experimental group of primigravida mothers with their selected demographic variables.

- Chi-square value reveals that there is no significant association between post test scores of experimental group among primigravida mothers when compared to age, religion, education, occupation, income, family type , area of living, antenatal check up, gestational weeks, and history of dysmenorrhoea.($p>0.05$)

- In control group association marked between post test maternal outcome score and income per month ($X^2 = 11.92$) when compared to evidenced significance with ($P<0.05$)

- In control group association marked between post test maternal outcome score and antenatal check up ($X^2 = 10.01$) when compared to evidenced significance with ($p<0.05$).

- Chi-square value reveals that there is no significant association between post test scores of newborn outcome with experimental and control group among primigravida mothers when compared to age, religion, education, occupation, income, family type, area of living, antenatal check up, gestational weeks, and history of dysmenorrhoea.($p>0.05$)

6.2 CONCLUSION

The conclusions were drawn on the basis of the findings of the study. The results were explained by using descriptive and inferential statistics.

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

- The slow-paced breathing exercise, sacral massage and position changes were the selected nursing interventions in reducing the level of pain perception during latent, active and transitional phase of post test mean score (5.91) and (5.09) was less than the post test mean (7.20, 6.94) and (7.2) level of pain perception score in experimental and control group. The calculated t' value ($t=5.70$, $p<0.05$, $t=7.63$ $p<0.05$, and $t=8.61$, $p<0.05$) was higher than table value ($p<0.05$).

- There was a significant improvement in post test maternal outcome score of primigravida mothers in experimental group than the post test maternal outcome score of control group. The computed't' value ($t=10.69$) was greater than table value. ($p<0.05$)

- Early initiation of breast feeding through breast crawl is an one of the selected nursing intervention in improving the newborn Apgar score and other newborn outcome,

- There was a significant improvement in post test newborn Apgar score in experimental group than the post test newborn Apgar score of control group. The computed 't ' value (t=3.14) was greater than table value ($p<0.05$)

- There was a significant improvement in post test newborn outcome score of primigravida mothers in experimental group than the post test newborn outcome score of control group. The computed't' value (t=8.95) was greater than table value ($p<0.05$).

- There is no significant association between post test maternal outcome score with demographic variable of primigravida mothers in experimental group.

- There is a significant association between post test maternal outcome score with demographic variable of primigravida mothers in control group with Income per month and antenatal check up.

- There is no significant association between post test newborn outcome score with demographic variables of primigravida mothers in experimental and control group.

6.3 NURSING IMPLICATIONS

The investigator has devised the following implications that may be vital for the maternity nurse, mental health administrator, nurse educator and nursing researcher.

6.3.1 Maternity Nursing

Maternity nurse can train the local volunteers, community health personnel, family members of antenatal mothers in educating for the comfort measures related to labour, she can:

- Provide education on alternative therapies of selected nursing interventions with multimedia aids and motivating the primigravida mothers to practice them during

labour to make easier childbirth and less stressful experience.

- Help the mother and her partner (or) support persons, guidance and support in using self- comforting techniques and non- pharmacologic methods to relieve pain and enhance labour process.

- Help the women perceive that they coped successfully with the pain and stress of labour and state that they able to transcend their labour pain and experience a sense of strength and profound psychologic and spiritual comfort during labour.

- Involve in reproductive health information campaigns and comfort measures during labour, should be informed the advantages of alternative approaches during delivery.

- She should be aimed to increase the number of midwives trained in comfort measures for pain relief during childbirth, in order to promote the obstetrical outcome and ensure efficiency and safety.

- Midwife distract the mother's attention from pain by implementing various comfort methods, as educators can promote clients knowledge and skills towards comfort strategies.

- The cost-effective nursing intervention can decrease pain and anxiety during labour and also positively influence the quality of women's birth experiences.

6.3.2 Nursing Administration

- Nursing administrator can organize various obstetrical health programmes related to low-risk labour and promotion of comfort during labour and delivery.
- Educational program include practice of breathing exercises during labour and improving the coping ability in intrapartum period may promote the quality of maternal and newborn outcome.
- Providing appropriate protocols, trained man power and supplies should be undertaken by the nurse administrator and mobilize and funding for maternal health programme.
- Organize and encourage the uses of massage and various birthing positions in the labour room promotes the better obstetrical outcome.
- The nurse administrator can be informed about the implementation of breast crawl as a routine procedure in the labour ward should be followed up by the maternity nurse in all level hospitals and community health centres.

6.3.3 Nurse Educators

- Organize seminar, workshops, symposium, continuing education program on intrapartum care based on the alternative \ complementary intervention in promotion of comfort during delivery.
- Select and organize the learning experience for midwives where handful of experience will be obtained in management of primigravida women during labour.
- Nurse educator can device a curriculum for training programme on breathing exercise massage and adopting various comfortable positions during labour helpful for the assistant nurse midwives and obstetrical health care professional to tackle the labour related problems

at various setting.

- Nurse educator should prepare the nurses with the potential for imparting health information effectively to the antenatal mothers and help them out in choosing suitable method during their delivery period.

- A curriculum should be updated in relation to the changing society since it will help out the primigravida women to upgrade their knowledge and skill needed during labour and postpartum.

- Nursing curriculum should incorporate practice of alternative and non- pharmacological approaches for labour, so that the students can render skill and applied exposure in the field of nursing service and will be able to take care of parturient women.

6.3.4 Nursing practice

- Selected nursing interventions of slow - paced breathing exercise, sacral massage, position changes and initiation of immediate breast feeding through breast crawl techniques were non- pharmacological methods, which are gaining popularity and is finding more substantial place in obstetrical health
  care. Holistic nursing regards and treats the mind, body and sprits of the client.

- Midwives can implement the holistic approach based on interventions like slow paced breathing exercises, massage and various positions used during labour improves maternal and newborn outcome. These alternative approaches positively influence the maternal outcome which improves the newborn outcome also. These are cost effective in nature, economical, safe and does not cause any harm.

- Slow - paced breathing exercise, sacral massage, position changes and initiation of immediate breast feeding through breast crawl technique during labour can be safely implemented inpatient care, which through this study has been proved to

reduce pain perception during labour and promote good maternal and newborn outcome, through by promoting the evidence based approach and this practice becomes the autonomous role of selected nursing interventions.

6.3.5 Nurse Researcher

- Strengthening research to identify future direction to monitor, evaluate the impact of programs, polices related to intrapartum care.
- Implementation of evidence based approach in reduction of pain during labour as an effective strategy.
- The study findings can be utilized for secondary analysis and meta analysis to study about non-pharmacological approaches during labour.
- The nurse researcher should be aware about the existing health care system and the status of nursing profession .Thus it helps to improve their clinical knowledge, skill and attitude of the nurse. In this study the selected nursing interventions highlighted by the use of slow-paced breathing exercise, sacral massage, position charges and early initiation of breast feeding through breast crawl technique during labour, thus it makes a pleasant as well as effective, non-pharmacological and cost effective intervention during labour.

6.4 RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations have been made for the further study:

1. A comparative study can be done to assess the awareness regarding no pharmacological therapy during labour among primigravida mothers between rural and urban community.
2. A randomized control trial can be conducted to determine the effect of massage

therapy on duration of labour to improve the maternal outcome of primigravida mothers.

3. A similar study could be conducted to evaluate the effectiveness of maternal position changes in reducing pain and suffering during labour.

4. Varied bio physiological parameters can be ruled and instituted with maternal and newborn outcome variables for its objectivity.

5. A clinical trial can be conducted to determine the inhibitor factors of early initiation of breastfeeding through breast crawl among mothers in rural area.

6. A study can be conducted as a longitudinal and follow up research of selected nursing interventions on maternal and newborn outcome and prevention of anaemia among primigravida mothers in the rural communities.

7. Nursing theory can be developed, constructed and tested on selected nursing interventions of slow-paced breathing exercise, sacral massage, position changes and breast crawl technique were applicable for the whole quantity of meta paradigm.

8. A similar study can be done to evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers in primary health centres.

9. Qualitative approach can be initiated to generate hypothesis on selected nursing intervention during labour.

10. A Similar study could be conducted to evaluate the effectiveness of other non - pharmacological methods, and alternative therapies in reducing pain, anxiety and promotes good maternal outcome during labour.

6.4 LIMITATIONS

1. The investigator had constrains in administering the intervention to the primigravida mothers during the study period although it was tackled with the help of attender.

2. Satisfaction of subject would have been measured.

3. Data collection time was re-altered by the investigator as per the feasibility of the sample.

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ANNEXUREI

ETHICAL CLEARANCE CERTIFICATE

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Member of the Society ol the Critical Care Medicine, CALIFORNIA. U.S.A.

Member of the American College of Medical Toxicology, U.S.A. Emergency. Trauma and Critical Care Physician

Chairman

Ethical Committee Clearance Certificate

We, the Undersigned Chairman/Members of the Ethical Committee, functioning in *Dhanvantri College of Nursing, PaUakkapalayam* have studied the proposed research Subject/Project *of "EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA MOTHERS AT SELECTED HOSPITALS, TAMIL NADU."* a candidate *Ms. SHENBAGAVALLI .S* applying for thesis submission and hereby give the certificate of clearance of approval by this Ethical Committee held on it meeting on 20/12/2016 in the presence of its members and a copy of the minutes of the meeting is enclosed.

Signature of the Chairman on behalf of the Ethical Committee

Name of the Institution :
Dhanvantri College of Nursing,

Station : PaUakkapalayam

Date : 20/12/2016

Seal :

Administrative Office : 27, Poonkundranar Street, Karungalpalayam, Erode - 638 003. Tamil Nadu, India.

PaUakkapalayam

MINUTES OF THE MEETING OF THE INSTITUTION ETHICAL COMMITTEE HELD ON 20/12/2016 AT CONFERENCE HALL BY 10.30 AM

MEMBERS PRESENT

1. Chairperson	**Prof. Dr. N. Ganapathy,** M .B.B.S.,D.A.,M.D. F.C.C.P., Chairman, Dhanvantri Institute of Medical Education and Research, Erode.
2. Co-chairperson	**Mrs. P. Padmavathi,** MSc (N), (Ph.D) Principal, Dhanvantri College of Nursing, Pallakkapalayam, Namakkal District
3. Medical Scientist	1. **Dr. C. Susila,** Ph.D, Nursing Principal, Billroth College of Nursing, Chennai 2. **Dr. B. Tamilarasi, M.Sc., (N), Ph.D., (N) Principal,** Matha College of Nursing, Matha Nagar, Somangalam Road, Chennai - 600 069.
4. Clinicians from various institutes	**1. Dr. T.K. Swamy., M.S., M.ch., (Gastro),** Valli Hospital, Erode. **2. Dr. D.K. Manoharan,** M.S., (Gen) M.ch., (cardiothoracic), F.C.C.P, V.K.. Hospital, Erode. **3. Dr. R. Gopinath,** M.D, D.N.B., (Cardio), Sri Athi Sathya Hospital, Erode.
5. Legal expert	**Mr. N.C. Ravikrishnan,** B.Com., B.L., Advocate Consultant, Erode
6. Representative of non-governmental voluntary agency	**Mr. S.V. Mahadevan** President, Erode Idayam Narpani Iyakkam Trust, Erode
7. Philosopher	**Mr. K. Shanmugasundaram,** M.A, M.Ed., M. Phil, Maharaja College of Education, Erode.
8. Lay person from the community	**Mr. P.N. Muthuswamy,** President, Pallakkapalayam, Namakkal District.
9. Member Secretary	**Mrs. T. Jayadeepa,** MSc (N), Reader, Dhanvantri College of Nursing, Pallakkapalayam, Namakkal District.

The meeting was presided over by Dr. N. Ganapathy Chairman Dhanvantri College of Nursing.

Prof. P. Padmavathi, Principal, Dhanvantri College of Nursing welcomed the members of the meeting and then initiated the discussion of the meeting.

The following two proposal have been presented in the meeting for the ethical review.

Proposal No	Title	Name of the Investigator	Remarks
1,	A comparative study to assess the effectiveness of selected nursing strategies versus acupressure and the quality of life on osteoarthritis among geriatric clients residing in selected old age homes in Tamilnadu.	Ms. Bharathi ,J	APPROVED
2.	Effectiveness of selected nursing intervention on maternal and new born out come among primigravida mothers at selected hospitals, Tamilnadu.	Ms. Shenbagavalli S.	APPROVED

Their presentation have been reviewed and scrutinized effectively by the committee members and they have ethically approved.

Dhanvantri College of Nwns»'.> Ganapathy purnm, No.t,
Ranganoor Road. Palfakkapalayarn Po., fJAIMAKKAI.
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ANNEXURE-II

LETTER SEEKING PERMISSION TO CONDUCT STUDY

From

Ms. S. SHENBAGAVALLI, M.Sc Nursing
Dhanvantri college of nursing,
Ganapathypuram, No.l,Renganoor road,
Pallakkapalayam , (PO), Namakkal (DT).

To

THE MANAGING DIRECTOR,
Narayanaa hospital,
Purasawalkam, chennai

Respected sir / madam,

Sub: Permission to conduct research study- Regarding

I, Ms. S. Shenbagavalli, M.sc (Obstetrics and Gynaecological Nursing) Studying in Dhanavantri collage of Nursing, Pallakkapalayam as a Partial Fulfillment of Doctorate in philosophy (Nursing). I am going to conduct a research and submit the dissertation work to the Tamilnadu Dr. M.G.R Medical University, Chennai.

The statement of the problem chosen for my study is " **Effectiveness of Selected Nursing Intervention on Maternal and Newborn Outcome among Primigravida Mothers at Selected Hospitals , Tamil Nadu,"**

So that I need your permission to conduct the study at your hospital, and the period from 2014-2015.

Kindly do the needful

Thanking you,

Yours faithfully,

ANNEXURE-II

(S. Shenbagavalli)

LETTER SEEKING PERMISSION TO CONDUCT STUDY

From

Ms. S. SHENBAGAVALLI, M.Sc Nursing
Dhanvantri college of nursing,
Ganapathypuram, No.l,Renganoor road,
Pallakkapalayam, (PO),Namakkal (DT).

To

THE MANAGING DIRECTOR,
Annai Theresa hospital,
Medavakkam, chennai

Respected sir / madam,

Sub: Permission to conduct research study- Regarding

I, Ms. S. Shenbagavaili, M.sc (Obstetrics and Gynecological Nursing) Studying in Dhanavantri collage of Nursing, Pallakkapalayam as a Partial Fulfillment of Doctorate in philosophy (Nursing). I am going to conduct a research and submit the dissertation work to the Tamilnadu Dr. M.G.R Medical University, Chennai.

The statement of the problem chosen for my study is **"A Study To Assess The Effectiveness of Selected Nursing Intervention on Maternal and Newborn Outcome among Primigravida Mothers at Selected Hospitals , Tamilnadu,"**

So that I need your permission to conduct the study at your hospital, and the period from 2014-2015.

Kindly do the needful

Thanking you, Yours faithfully ,

(S. Shenbagavalli)

ANNEXURE - III

LETTER GRANTING PERMISSION TO CONDUCT STUDY

ANNAI THERESA HOSPITALS PVT. LTD

Reg.No. U8 5110 TN 2002 PTCO 49179

24 HOURS EMERGENCY CARE

Mrs. S. Shenbagavalli _C/“CAX^ik^.

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\r\ one hospital at any time for improving her knowledge.

Dr.K. SRISUDHAMBBS. ,
Reg.No. 92845 Medical Director
Annai Theresa Hospital Pvt Ltd
No.1/1173, Velachery Main Road,
Medavakkam, Chennai - 600 100.

LETTER GRANTING PERMISSION TO CONDUCT STUDY

NARAYANAA HOSPITAL

AN ISO 9001: 2000 CERTIFIED

#18, Tana Street, Purasawalkam, Chennai - 600 007. Ph: 2665 0899.

Dr, A. Srinivasan MBBS,C,DIAB,(Austra!la),PGDHS(Diab),M.H.Sc.,Diabetology

Dr, Mrs. Varalakshmi Srinivasan MBBS., DGO„

Date: 15/01/2015

℞

T. ' ' pev VAtSitom ᵛ *I)*

Certificate

This is to certify that

Mrs. S. Shenbagavalli, studying as a

PK.b. Course □Jr the

Dr. M.G. R>. Medical University, Guindy,

Chennai . _ C,oo o ' 32

I will give permission to

AU. and study of inpatients

outpatients, cases in

hospital at any time for the

of improving her knowledge.

Dr.V.Varalakshmi
Regn, No:46973
No.18, Tana Street,
Chennai-aoo 007

NARAYANAA HOSPITAL Chennai-17 TEL: 2665 0899

ANNEXURE-IV

RELATED RESEARCH WORK EXECUTED

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2454-2652 (Online)

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RESEARCH ARTICLE

Effectiveness of Sacral Massage on Maternal Outcome during First Stage Labour among Primigravida Mothers

Mrs. S. Shenbagavalli[1], Dr. K. Menaka[2], Prof. P. Padinavathi[3]

[l]Dhanvantri College of Nursing, Ganapathypuram, No.l Ranganoor Road, Muniyappan kovil, Pallakkapalyain (PO), Sankagiri west via, Thiruchengodu (TK), Namakkal Dist -637303.

'Principal, Padmasree College of Nursing, No. 20 A, Masilamani Nagar, Walajabad, Kanchipuram, District

'Principal, Dhanvantri College of Nursing, Pallakkapalyain, Namakkal District,

*Corresponding Author's Email: **shakthinilasri@gmail.com**

ABSTRACT:

Back ground: Pregnancy and childbirth are universally celebrated events, yet childbirth is one of the most common stressed and painful situation which adversely affect the maternal and child health. **Objective:** To assess the effectiveness of sacral massage on maternal out come during first stage labour among primigravida mothers. **DesignA** one group true experimental post test only design was adopted for the study. **Setting:** Labour ward at Government Hospital, Cheyyur. **Participants:** 20 Primigravida mothers completed 36 weeks of gestation fulfilling the inclusion criteria were selected by simple random sampling. **Methods:** Sacral massage is application of sacral pressure in lower thoracic to sacrococygeal region, for 15 minutes duration during uterine contraction in every one hour interval. After the intervention pain perception was a assessed with numerical pain intensity scale in the three phases of labour ie latent (3-4cm), active (5-7cm) and transition phase (8-lOcm) and maternal outcome was assessed with ongoing assessment tool. Results: **In** post test the mean score for the level of pain perception in experimental group was5.85 (SD =1.45) and the control group score was 8.9(SD=0.78) with paired I value of 4.75. In maternal outcome the experimental group mean score was 24 (SD=3.14) and control group maternal outcome score was 7.8(SD=0.92) with paired I value of 28. 49. This showed that the sacral massage was effective in reducing the level of pain perception during labour and promotes maternal out come. There was a statistically no significant association found between the post test score of the sample with their demographic variables. ConclusionfThe findings imply the need for non pharmacological methods of sacral massage was effective management during labour among primigravida mothers.

KEYWORDS: Effectiveness, sacral massage, primigravida, maternal outcome

NEED FOR THE STUDY:

Massage is a time-honored method by which women have received comfort throughout the millennia, yet it has not been rigorously evaluated in the modern day _____delivery suite. Advocated by Hippocrates and practiced by the Romans, massage was reinvented in modem times in the late 1700s in Sweden. Swedish massage, now one of the most commonly taught techniques, consists of five basic strokes based on kneading, rolling, vibration, ---------- percussive, and tapping movement, with the application

of oil to reduce friction on the skin. Chang M.Wang (2002)

Massage therapy has been theorized to create a stimulus (hal interferes with the transmission of pain to the brain, effectively "closing the gate" to the reception of pain. It has also been suggested that massage stimulates the release of endorphins and increases serotonin levels to inhibit the transmission of noxious nerve signals to the brain. Hodnett E.D (2002)

Studies of massage therapy in childbirth to date have been limited. A Taiwanese trial randomized 60 nulliparous women to receive a 30-minute massage, first administered by the primary researcher, then by the woman's partner during each phase of labour. A nurserated pain intensity scale consisting of five observed levels of pain (normal respiration, increased frequency or amplitude of respiration, intermittent gasping, persistent gasping, and agitation) was significantly lower in the massage group compared to the control group in all phases of labour. Lamaze F.(2000)

STATEMENT OF THE PROBLEM:

A study to assess the effectiveness of sacral massage on maternal outcome during first stage labour among primigravida mothers in selected hospitals.

OBJECTIVES:

1. To assess the maternal outcome during first stage labour among primigravida in experimental and control group.
2. To evaluate the effectiveness of sacral massage on maternal outcome during first stage labour among primigravida in experimental and control group.
3. To find out the association between the post test scores of maternal outcome among primigravida and their selected demographic variables.

HYPOTHESIS:

lip There will be significant effectiveness of sacral massage on maternal outcome among primigravida mothers in control and experimental group.

H_2: There will be significant association between the post test scores of maternal outcome among primigravida mothers in control and experimental group with their selected demographic variables.

MATERIALS AND METHODS:

Research approach:

An evaluative approach was considered as the appropriate measure to evaluate the effectiveness of sacral massage on maternal outcome during first stage labour among primigravida mothers.

Research design:

True experimental post test design only was used.

Research setting:

The study was conducted in labour ward at Government Hospital, Cheyyur.

Sample:

The sample consisted of 20 primigravida mothers completed 36 weeks of gestation and admitted in labour ward.

Sampling technique:

Simple random sampling technique was used to select the sample.

Development of tool

Section A: Demographic variables of the samples.
Section B: Numerical pain intensity scale [mild pain=I-3, moderate pain=4-7,
severe pain= 8-10]
Section C: Maternal outcome ongoing assessment tool.

PLAN FOR DATA ANALYSIS:

The data were analyzed by using both descriptive and inferential statistics.

- Background information of the subject were described by percentage distribution.
- Mean , standard deviation and paired t" test was used to find the relationship between post test scores on pain perception and maternal outcome among primigravida mothers.
- Chi square test was used to find out the relationship between selected variables of primigravida mothers with their post test scores.

RESULTS:

Section A:

Most [47% | of primigravida mothers were in age group of 24-26 years. However 40% of them were studied up to primary school level, 60% of primigravida mothers were home maker, 43% of primigravida mothers income were< Rs.5000/ month, most[57%] of primigravida mothers were belongs to joint family , 63% of them were Hindu, 60% of primigravida mothers were in rural area, 80% of them was come to regular antenatal checkup, most 70% of primigravida mothers were in gestational age of 41-42 weeks.

Section B:

In post test experimental group [80%] of them were in moderate level of pain perception, 15% of them were in mild level of pain perception and 5% of them were in severe level of pain perception, whereas in

control group most [97%] of them were in severe level of pain perception and 3% of them were in moderate level of pain perception. It shows that sacral massage was effective among primigravida mothers during first stage labour.

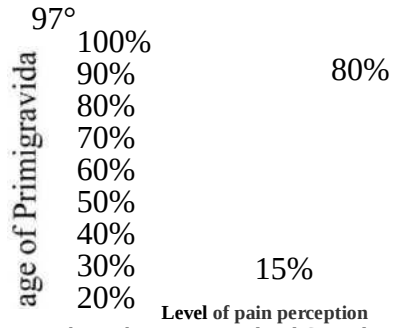
Section C:

In experimental group the mean score for maternal outcome was 24[SD—3.14] Whereas in control group the mean score was 28.3[SD= 4.421 which indicated a sacral massage was effective during first stage labour among primigravida mothers.

Paired 'I' test value was computed to evaluate the effectiveness of sacral massage during first stage labor. The obtained value was 2.04, which was significant at 0.01 levels indicating the effectiveness of sacral massage.

Section D:

Chi - Square was computed to determine the association between post test Scores of primigravida mothers with their selected variables like age, education, occupation, income, Family type, religion, living area, antenatal check up and gestational weeks.



Bar diagram shows the experimental and Control group scores of Pain perception during first stage labour among primigravida mothers

Table. 1- Level of pain perception during first stage labour among primigravida mothers in experimental and Control group

Table.2-C'omparison of Mean, SI) of pain perception and maternal outcomes among primigravida mothers in experimental and control group

Primigravida mothers Post test score									t' value
	Exper imen tal group				Contro l group				
	N	Mean	S.D	Std. Error mean	N	Mean	S.D	Std. Error mean	
Pain perception	10	5.85	1.45	0.50	10	8.9	0.78	0.27	4.75*
Maternal outcome	10	24	3.14	0.97	10	28.3	4.42	1.41	2.04*

Significant at P<0.05

DISCUSSION:

Highly significant difference found between experimental and control group posttest scores of level of pain perception and maternal outcome during labour among primigravida mothers.

No significant association was found between post test scores and their demographic variables of both the groups among primigravida mothers.

LIMITATIONS:

The study was limited to 20 primigravida mothers completed 36weeks of gestation and admitted to labour ward at government hospital .cheyyur and who were willing to participate in the study. Sample selected for the pilot study were not considered as sample for main study.

CONCLUSION:

The findings imply the need for sacral massage was effective during first stage labour for reduction of Pain perception and improve maternal outcome.

Massage act as a non- pharmacological method of pain relief.

RECOMMENDATIONS:

On the basis of the findings of the study it is recommended that,

- A large scale study can be carried out to generalize the findings.
- A similar study can be conducted among multigravida mothers
- A comparative study can be conducted to evaluate the effectiveness

  between primigravida and multigravida mothers.

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RESEARCHAR TICLE

Effectiveness of Selected Nursing Intervention on Maternal and Newborn Outcome among Primigravida Mothers at Selected Hospitals

Mrs. S. Shenbagavalli[1]*, Dr. K. Menaka[2], Prof. P. Padmavathi[3]
^hanvantri College of Nursing, Ganapathypuram, No. 1 Ranganoor Road, Muniyappan Kovil, Pallakkapalyam (PO), Sankagiri West Via, Tliiruchengodu(TK), Namakkal Dist — 637303.
'Principal, Padmasree college of Nursing, No. 20 A, Masilamani Nagar, Walajabad, Kanchipuram District
'Principal, Dhanvantri College of Nursing, Pallakkapalyam, Namakkal District
*Corresponding Author Email: **shakthinilasri@gmail.com**

ABSTRACT:

Back ground: Labour is one of the most common stressed and painful situations which adversely affect the maternal and new bom outcome leads to many complications. **Objective:** To assess the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers. **Design:** One group true experimental post test only design was adopted for the study. **Setting:** Government Hospital, Chcyyur, **Participants:** 20 primigravida mothers completed thirty six weeks of gestation fulfilling the inclusion criteria were selected by simple random sampling. **Methods:** Nursing interventions like Breathing exercise, massage, position changes implemented during intrapartum period and level of pain perception assessed with universal pain assessment tool during uterine contractions of first stage of labour. Followed by early initiation of breast feeding done through breast crawl technique. Maternal and newborn outcome assessed with ongoing assessment tool. Collected data was analyzed by using descriptive and inferential statistics. Results: In post lest the mean score for the level of pain perception in experimental group was 6.5 (SD=1.58) and the control group was 9.1 (SD=0.88) with paired t' value of 4.55. The mean score of experimental group maternal outcome was 23 (SD —3.13) and the control group outcome was 27.4(SD=4.62) with paired f value of 2.49. In experimental newborn outcome the mean score was 7.7 (SD=1.06) and control group newborn outcome score was 6.8(SD=0.92) with paired t value of 2.04. This showed that the selected nursing interventions were effective for good maternal and newborn outcome during labour. There was a statistically no significant association found between the post test score of the sample with their demographic variables. **Conclusion:** The findings imply the need for non pharmacological methods of nursing interventions were effective management during labour among primigravida mothers.

KEY WORDS Effectiveness, Breathing exercise, Massage, Position changes. Breast crawl and Primigravida.

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Accepted on 28.07.2016
Asian J. Nur. Edit, and Research.2016; 6(4): 425-428.

INTRODUCTION:

Save a mother educates women about pregnancy, nutrition, immunization, delivery and care of the child. We believe that one preventable death is one too many. Jabadi F(2010)

Modern Lamaze childbirth classes teach expectant mothers many ways to work with labor process to reduce

the pain associated with child hirth and promote normal (physiological) birth including the first moment after birth. Techniques include allowing labor to begin on its own. Movement and position, massage, aromatherapy, hot and cold packs, informed consent and informed refusal, breathing techniques, the use of a “birth ball" (yoga or exercise ball), spontaneous pushing, upright positions for labor and birth, breastfeeding techniques, and keeping mother and baby together after childbirth. Lamaze (2000)

The Lamaze technique, often referred to simply as Lamaze, is a prepared childbirth technique developed in the 1940’s by French obstetrician Dr.Femand Lamaze as an alternative to the use of medical intervention during childbirth.

The goal of Lamaze is to increase a mother’s confidence in her ability to give birth; classes help pregnant women understand how to cope with pain in ways that both facilitate labor and promote comfort, including focused breathing, movement and massage.

Massage and breathing naturally helps to consciously relax the body, a skill that’s needed during the child birth. Early and active labor can especially benefit from massage. It relaxes the muscles and mind, allowing the body to take over. Letting can be the hardest thing to do, but it will bring control. Cunningham F. Gant N.F (2001)

NEED FOR THE STUDY:

According to WHO worldwide every minute of every day a women dies somewhere in the world as a result pregnancy or child birth globally, this is more than half a million a year worldwide.

Global maternal mortality estimate 400/1,00,000 live birth.

Maternal death worldwide is 25%.less than 1% maternal death in more developed region and 90% in developing countries, 13% countries account for 67% of alt maternal deaths. Highest Estimated numbers are India, Nigeria, Pakistan, and Democratic republic of Tanzania Afghanistan, Bangladesh, Angola, China, Kenya, Indonesia and Uganda (WHO)

According to UNICEF, every year 78,000/1,00,0000 mothers die during child birth in India. According to UNICEF, India’s maternal mortality rate stands at 450/1,00,000 live births. Against 450 in 1998-1999 India’s millennium development goal is to reduce the maternal mortality rate to 109 by the Year 2015.

Geller in 2006 surveyed that in addition to maternal mortality, 7 million more women suffer serious health problems related to child bearing and 50 million suffer adverse health effects.

In Tamil Nadu, from the year 2001 to 2003 maternal mortality were 130/1,00,000. In the year 2007 to 2008 maternal mortality were 91/1,00,000. And in the year2009 maternal mortality were 79/1,00,000. From the year 2010 to 2011 maternal mortality were 68/1,00,000. From the year 2011 to 2012 maternal mortality were 58/1,00,000. From the year 2012 to 2013 maternal mortality are 49/1,00,000.

According to 2005 survey, the average crude birth rate the entire world was estimated to be 20.3 births per 1000 populations. As per 2001 census, the population of Tamilnadu was 6.24 crores with dedicated growth rate of 11.7% which was the second lowest in the country next to Kerala. Tamilnadu was the sixth most populous state in India. In accounts 6% of the country’s total population. The Tamilnadu as per government of India sample registration system 2002 furnished the birth rate to be 18.5/1000 population.

STATEMENT OF PROBLEM:

Effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers at selected hospitals.

OBJECTIVES:

> To assess the maternal and newborn outcome in experimental and control group.
> To evaluate the effectiveness of selected nursing intervention on maternal and newborn outcome.
> To find out the association between maternal and newborn outcome with their selected demographic variables.

Hypothesis

> There will be a significant difference in maternal and newborn outcome between experimental and control group.
> There will be significant correlation between maternal and newborn outcome.
> There will be significant association between maternal and newborn outcome in experimental and control group.

MATERIALS AND METHODS:

Research approach

An evaluate approach was considered as the appropriate measure to evaluate the effectiveness of selected nursing interventions on maternal and newborn outcome among primigravida mothers.

Research design

True experimental post test only design was used.

Research setting

The study was conducted in antenatal outpatient department at government hospital, cheyyur.

Sample

The sample consisted of 20 primigravida mothers completed 36 weeks of gestation. (10 control group and 10 experimental group)

Sampling technique

Simple random sampling technique was used to select the sample.

Development of tool

Section A: Demographic variables
Section 13: Universal pain assessment tool
Section C: Ongoing assessment tool for maternal outcome
Section D: Ongoing assessment tool for newborn outcome

Data collection procedure

1. Ethical clearance obtained from hospital research committee
2. Followed by informed consent from 20 primigravida mothers completed 36 weeks of gestation 10 mothers from each group. Base line data was obtained from both the groups. Slow paced breathing exercise taught to experimental group and reinforces to practice 6-9 breaths/min for every day throughout pregnancy and every one hour during uterine contractions of first stage of labour. Followed by abdominal eflleurage (light fingertip touching of 5 strokes in supine position.) and sacral pressure in lower thoracic to sacrococygeal region for 10-15 mts for every one hour. Simultaneously position changed from lateral to upright position alternatively for 20 — 30 mis during first stage of labour. After the delivery within half an hour early initiation of breast feeding through breast crawl technique is implemented to newborn after cutting the cord.
3. Participants in both groups received the same care except the selected nursing interventions of breathing exercise, massage, position changes and breast crawl technique.

Chi — square test was used to find out the relationship between selected variables of primigravida mothers with their post test scores.

RESULTS:

Section A:

The study findings showed that in control group (30%) of primigravida mothers were in age group of 24 - 26 years, 40% were no formal education and homemakers, 40% of them were belongs to nuclear family. Majority 60% of them were Hindus, 80% of them were come to regular antenatal checkup. Highest percentage (70%) of them was in gestational age of 41 — 42 weeks.

The study findings showed that in experimental group 30% of primigravida mothers were in age group of 27 - 29 years, 30% were high school education, 30% of primigravida mothers were daily labour, 40% of them income were less than 5000/ month, 50 % of primigravida mothers were belongs to rural area, 60 % of them were in gestational age of 37 - 38 weeks.

Section B:

The level of pain perception in post test experimental group 60% of primigravida mothers were in moderate level of pain perception, 20% of them were in mild and severe level of pain perception, where as in control group 100% of primigravida mothers were in severe level of pain perception.

Section C:

In experimental group the mean value for maternal outcome was 23(SD=3.I3) where as in control group it was 27.4(SD=4.62) with the paired 't' test value was 2.49 in newborn outcome, the experimental group mean value was 7.7(SD=1.06), where as in control group it was 9.1 (SD=0.88) with the paired 't' test value was 2.04. It seems that the selected nursing interventions are breathing exercise, tnassage, position changes and breast crawl were effective during labour process.

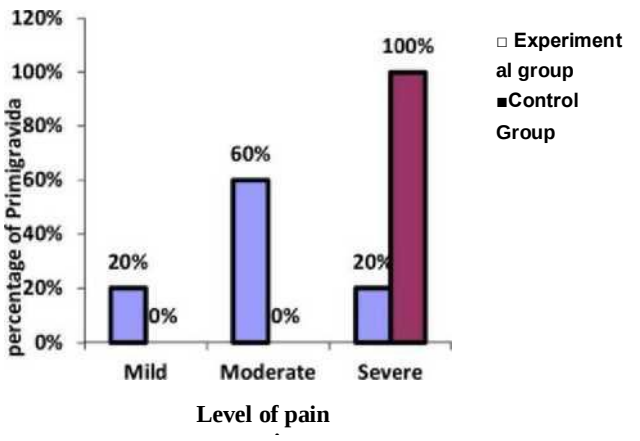
Section D:

Chi square was computed to determine the association between post test scores of primigravida mothers with their demographic variables like age, education, occupation, income, family type, religion, living area, antenatal checkup and gestational weeks.

Plan for data analysis

The data were analyzed by using both descriptive and inferential statistics. Back ground information of the subject were described by percentage distribution. Mean, Standard deviation, and 't' test were used to find the effectiveness of selected nursing intervention on maternal and newborn outcome among primigravida mothers.

Table 1- Level of pain perception during first stage labour among primigravida mothers in experimental and C ontrol



Bar diagram shows the experimental and Control group scores of Pain perception during first stage labour among primigravida mothers.

Tablet-Comparison of Mean, SD of pain perception, Maternal and Newborn outcome among primigravida mothers in experimental and control group

Primigravida mothers	Post test score								t' value
	Experimental group				Control group				
	N	Mean	S.D	Std. Error mean	N	Mean	S.D	Std. Error mean	
Pain perception	10	6.5	1.58	0.50	10	9.1	0.88	0.28	4.55*
Maternal outcome	10	23	3.13	0.99	10	27.4	4.62	1.46	2.49*
New born outcome	10	7.7	1.06	0.34	10	6.8	0.92	0.29	2.04*

Significant at P<0.05

DISCUSSION:

> Highly significant association was found between post test scores of pain perception, maternal and new born outcome among primigravida mothers in experimental and control group.

> No significant association was found between post test and their demographic variables of both the groups among primigravida mothers.

RECOMMENDATIONS:

> Non pharmacological pain management should be emphasized in nursing curriculum.

> Training programs for the nurses can be given on complementary therapies.

LIMITATIONS:

> The study was conducted only among primigravida mothers.

> Intervention was limited to labour process.

> Relatively small sample size.

CONCLUSION AND SUMMARY:

> Breathing exercise, massage, position changes and breast crawl technique significantly improved the maternal and newborn outcome during labour.

> Nurses interested in non pharmacological therapies should be encouraged to obtain training in alternative therapy especially Lamaze technique of selected nursing interventions like Breathing exercise ,massage, position changes and breast crawl technique and apply it in clinical settings if it is allowed.

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ANNEXURE V

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ANNEXURE VI

ENGLISH AND TAMIL EDITING CERTIFICATES

I hereby certify that I have validated the tool of Ms. S.SHENBAGAVALLI. ,M.Sc Nursing, Ph.D student of Maternity Nursing Studying in Danvantri College of Nursing. Namakkal District, who is undertaking the dissertation work on **"EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA MOTHERS AT SELECTED HOSPITALS, TAMILNADU"**

Place: ONAMB■

Date: *0* **. I** *2-* **• 2- o I 6 .**

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Name and Designation

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CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that 1 have gone through the dissertation titled **"EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA MOTHERS AT SELECTED HOSPITALS, TAMILNADU",** By Ms.S.SHENBAGAVALLI. **I** have corrected the dissertation from the Point of view of typological, punctuations and grammatical errors.

Place: Melmaruvathur

Signature of the Expert

Date: 03-12-2016.

/A ■

Name and Designation

ADHIPARASAKTHI COLLEGE OF NURSING MELMARUVATHUR 603 319

603319.

ANNEXURE VII

CONSENT FORM

I _____D/o. /S / o _____ agree

_____

to take part in the research Study, conducted by, PhD Scholar, Department of Research in Dhanvantri College of Nursing, entailed **"EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON MATERNAL AND NEWBORN OUTCOME AMONG PRIMIGRAVIDA MOTHERS AT SELECTED HOSPITALS, TAMILNADU.** I acknowledge that The research study has been explained to me and I understand that agreeing to participate in the research means that I am willing to:

- Provide information which is only the truth and to the best of my knowledge.
- Allow the research to have access to the medical records, Pertaining to the purpose of the analysis of the study.
- Allow to participate in the analysis program.

I have been informed about the purpose of my queries towards the research. I provide consent to the research to use the information given by me for educational purpose only. I understand that my participation is voluntary and can withdraw at any stage of research.

Signature of the Participant Signature of the investigator

Date: Date:

Contact Address

ANNEXURE VIII

Part-A: DEMOGRAPHIC VARIABLES

Instructions:

Please fill yours response to all the items given below by putting a tick [s/1 mark in the space provided in the bracket against the following items. There is no right or wrong answer. Kindly answer all the questions. The information given by you will be kept confidential.

Sample no:

LMP:

EDD:

j Age in Years

a. 18-20 Yrs
b. 21-23 Yrs
c. 24-26 Yrs
d. 27-29 Yrs
e. Above 29 Yrs

2 Religion

a. Hindu
b. Muslim
c. Christian
d. Others

2 Education

a. No formal Education
b. Primary School
c. High School
d. Higher Secondary school
e. Graduate & above

Occupation

a. Private /Business

b. Government
c. Daily Labour
d. Homemaker

Family income

a. < Rs 10,000
b. Rs 10,000 - Rs 15,000
c. Above Rs 15,000

Family type

a. Nuclear
b. Joint
c. Extended

Area of living

a. Urban
b. Semi Urban
c. Rural

Antenatal Check up

a. Regular
b. Irregular
c. Nil

Gestational weeks

a. 37-38 Weeks
b. 39-40 weeks
c. 41-42 Weeks

History of dysmenorrhoea

a. Yes
b. No

PART B- VISUAL ANALOGUE SCALE TO ASSESS THE LEVEL OF PAIN PERCEPTION AMONG PRIMIGRAVIDA MOTHERS DURING FIRST STAGE OF LABOUR

12 3 4 5 6 7 8 9 IO

MILD PAIN *MODERATE* *SEVERE PAIN*

Score Interpretation

1-4- Mild Pain

5-7- Moderate Pain

8-10- Severe Pain

PART-C OBSERVATION CHECK LIST TO EVALUATE THE MATERNAL OUTCOME

1. **Duration of 1st stage of labour**

a. less than 8 hours

b. More than 8 hours

2. **Duration of 2nd stage labour**

a. 1 -2 hours

b. above 2 hours

3. **Duration of 3nd stage of labour**

a. below 10 mts

b. above 10 mts

4. **Cervical dilatation in latent phase**

a. More than 4 cm

b. Less than4 cm

5. **Cervical dilatation in active phase**

a. More than 7 cm

b. Less than7 cm

6. **Cervical dilatation in Transitional phase**

a. More than 8 cm

b. Less than 8cm

7. **Uterine contractions**

a. Good and regular

b. Irregular

8. **Amniotic fluid status**

a. Clear

b. Colour change

9. Fetal heart rate

a. 120-160 beats/mts

b. Below 120 beats/mts

10. Fetal movements

a. More than 3movements in 12 hours

b. Less than 3 movements 3 in 12 hours

11. Episiotomy wound

a. Absent

b. Present

12. Perineal tear

a. Absent

b. Present

13. Maternal fatigue

a. Absent

b. Present

14. Blood loss in labor

a. Less than 300ml

b. More than 300ml

15. Mode of delivery

a. Normal spontaneous vaginal delivery

b. Assisted instrumental delivery

16 Separation of placenta

a. Normal removal

b. Manual removal

17. Bladder and Bowel elimination pattern

a. Normal

b. Difficulty

18. Involution of uterus

a. Good

b. Poor

19. Vital signs

a. Normal

b. Abnormal

20. Conscious status

a. Alert and oriented

b. Unconscious

21. Score interpretation

31-40- Good maternal outcome

20-30- Fair maternal outcome

Below -20- poor maternal outcome

PART-D OBSERVATION CHECK LIST TO EVALUATE THE NEW BORN OUTCOME

PartD (1)

ASSESSMENT OF FETAL OUTCOME

(APGAR SCORING CHART)

The five criteria of the Apgar score	Score of 0	Score of 1	Score of2	Observation	
				At 1 min	At 5 min
Appearance/ Complexion	blue or pale all over	blue at extremities body pink (acrocyanosis)	no cyanosis body and extremities pink		
Pulse rate	Absent	<100 beats per minute	>100 beats per minute		
Reflex irritability grimace	no response to stimulation	grimace on suction or aggressive stimulation	cry on stimulation		
Activity	None	some flexion	flexed arms and legs that resist extension		
Respiratory Effort	Absent	weak, irregular, gasping	strong, lusty cry		

Score Interpretation

Total score - 10

No depression - 7 to 10

Mild depression - 4 to 6

Severe depression - 0 to 3

Part D (2)

1. Birth weight of new born

a. More than 2.7 kg

b. Less than 2.7 kg

2. Temperature

a. Normal

b. Abnormal

3. Comfort

a. Decreased crying episodes

b. Frequent crying

4. Quality of attachment

a. attached to the breast correctly by own.

b. Need assistant.

5. Frequency of feeding

a. More than 8 times in 24 hours b .Less than 8 times in 24 hours

6. Presence of meconium stain

a. Within 30 minutes

b. Beyond one hour

Score interpretation

Total score-12

Good newborn outcome-8 -12

Fair newborn outcome-4-7

Poor newborn outcome-.>4

ANNEXURE IX

INTERVENTION TOOL-ENGLISH

GUIDELINES FOR SELECTED NURSING INTERVENTION OF SLOW-PACED BREATHING EXERCISE, SACRAL MASSAGE, POSITION CHANGES AND BREAST CRAWL TECHNIQUE. (EXPERIMENTAL GROUP)

SLOW-PACED BREATHING EXERCISE

Definition

It refers to the act of breathing at any number of possible rates and depths and helps in calming and relaxing effect.

Principles of breathing exercise work

- It helps in reducing the intensity of the pain during contractions and enables to regain strength during labour and to ease the delivery of the baby.
- Deep breathing helps to strengthen the abdominal muscles and given focus during contraction pain, which also helps with progression of the baby's delivery.
- Helps to cope with labour.

Advantages

- It becomes an automatic response to pain
- The mother remains in a more relaxed state and will respond more positively to the onset of pain.
- Provides sense of wellbeing and control.
- Increased oxygen provides more strength and energy for both the mother and baby.
- Making contractions more productive.
- Preparation before procedure
- Explain the importance of doing breathing exercise during pregnancy and labour.
- Instruct the mother to practice Slow-paced breathing exercise to be done at a rate of 6-9 breaths/minute for every one hour during pregnancy and the same to be continued till the end of the first stage labour during uterine contractions.
- Make the mother in comfortable sitting position.

Steps of procedure

- Instruct her to take an organizing breath- a big sigh as soon as the contractions begins.
- Focus attention.
- Slowly inhale through nose and exhale through mouth, allowing all air to flow out with a sigh.
- With each exhale, focus on relaxing a different part of body.

Repeat it for 6-9 breaths\minute for every one hour throughout pregnancy and continue the same during the beginning of each contraction to till the end of first stage labour.

After care

Sit (or) he down in a comfortable position.

Take a relaxed normal breath.

SACRAL MASSAGE

Definition

Sacral massage is an application of firm, deep pressure in a rhythmic, ascending, kneading hand movements with sacral pressure in a lower thoracic to sacrococcygeal region.

Principles

- Massage stimulates body to release endorphins, the natural pain-killing, mood-lifting produced in the brain.
- The sacrum is part of the pelvis that moves outwards during labour to make more room for the baby.
- Lower thoracic to sacrococygeal region (T10 and S4) which corresponds of the paravertebral ganglia, delivery canal and perineum.

Steps of procedure

- At the beginning of the latent phase of labour (cervical dilatation 0-4 cm) position the primigravida mother comfortably in left lateral position.
- Expose the back and sacrum.

Apply a firm and deep pressure at lower thoracic, to sarococcygeal region(T10-S4) in a rhythmic, ascending, kneading hand movements with sacral pressure using both thumbs for

10-15 minutes in every one hour till the end of the first stage labour during uterine contractions.

After care

Make the mother comfortable.

POSITION CHANGES

Definition

During labour encouraging the labouring women to adopt positions that women are most comfortable which help to promote good maternal and newborn outcome.

Principles

- Changing position during labour can change the shape and size of the pelvis which help the baby's head move to the optimal position during first stage labour.
- Help with frequency, length and efficiency of contractions.
- The effects of gravity can help the baby move down more quickly.
- Changing position help to ensure a continuous oxygen supply to the fetus, rather than causing supine hypotension by lying on back.

Advantages

Enhance the progress of labour.

Reduce the length of labour and duration of labour

Increase comfort,

Reduce pain

Reduce discomfort and distraction.

Procedure

After 10 minutes of relaxation from sacral massage, position the primigravida mother in upright (sitting or standing with support) for 20-30 minutes in every one hour till the end of the first stage labour.

Sitting position-sit with the legs wide apart and leaning forward with elbows on thighs with resting forward on pillows on the back rest.

Standing position - Leaning on bench top or similar surface or the back of a chair.

After care

Make the primigravida mother in a comfortable position.

BREAST CRAWL

Every newborn, when placed on her mother's abdomen, soon after birth, has the ability to find her mother's breast all on her own and decide when to take the first breast feed. This is called breast crawl.

Principles

- The baby is very alert and responsive soon after delivery and hence is at her best instinctive level.
- The baby is kept warm by being in skin-to- skin contact with the mother. Touch is also a strong stimulus for neurodevelopment.
- The baby's risk of infection is reduced because safe germs (bacteria) from the mother start to colonise her skin and intestine and prevent harmful germs from growing. Breast odour is a strong stimulus which derives the baby toward the nipple.
- Nipple massage release a hormone oxytocin in the mother, helps to contract the uterus, reduce bleeding and prevent maternal anaemia.

Advantages for newborn

- Warmth
- Comfort
- Metabolic adaptation
- Quality of attachment

For mother

- Breast crawling of baby initiate massage of the breast and subsequent suckling induce a large oxytocin surge into her blood stream.
- Promotes bonding between mother and baby.
- Helps in uterine contraction, and expulsion of placenta.
- Reduces blood loss and preventing anaemia.

Steps of procedure

- Soon after the delivery and after the baby has cried and started breathing well dry the

baby nicely except for the hands.

- Then the baby is to be shown to the mother and kept close to her and held briefly in cheek -to-cheek contact.
- The baby is then placed prone in between the mother's breast.
- The baby and mother's chest are both naked, so that the baby has full skin-to- skin contact with the mother.
- The baby and the mother should be covered together with a cloth, so that they keep warm while continuing with skin- to- skin contact.
- Care should be taken to prevent the baby from falling.
- Raise the mother's head on the pillow, so that the mother can see her baby easily during the breast crawl.
- The mother hand can support the baby's back.
- Continue in this position till the baby takes the first feed, which mostly will be achieve by 30-60 minutes.
- If the baby fails to latch, it should be assisted by a helper to attach to the breast.
- If mother should not be moved out of the labour room till the first breast feed is completed.

After care

Make the mother comfortable.

Take the baby from the mother for routine newborn care.

ANNEXURE X

PHOTOS

Investigator administering sacral massage

Investigator changing the client position

Investigator teaching the slow paced breathing exercise

Investigator implementing breast crawl technique

ANNEXURE-XI

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Match Overview

CHAPTER 1

INTRODUCTION

“HEALTHY BABIES START WITH HEALTHY MOTHERS"

Pregnancy is a natural event. supposed to be of celebration and joy. But still nioi developing discomforts and complications during pregnancy and delivery. T government implemented many programmes through the concept of safe motherhoo good health status before conception, regular antenatal visits of minimum tin pregnancy, hospital delivery, tertian health care sen ices in complicating cases.24 1 after delivery of mother and baby and follow up for six weeks after delivery.

Mothers undergoes various physiological and emotional changes during pregnancy. 1 conception and development of embryo inside the uterine cavity. Physiologies discomforts like vomiting sensation, acidity, urinary incontinence, malaise, ai difficulty, gingivitis, odenia etc. These discomforts arc signs that the body is natural for new life. If a women is healthy .she can go through pregnancy and childbirl discomforts and complications.

In the women’s life, childbirth is one of the most stressful event Though it shoulc women w ith each experience of child birth and calls for celebration But anxict childbirth often inhibits the most women from enjoying tins childbirth experience. 5 care providers need an adequate knowledge about signs of labour and dclii cry m i the feeling of self confidence and emotional well being, and it will be very cruc successful labour So it is very important Io health care providers towards the labou which critical decision can be made in the best interest of mother and newborn [1]

The pain experienced by women during labour invokes a subjective ex peril interaction which includes physical, social, psychological, environmental cul

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