

**EFFECT OF WARM COMPRESS DURING LABOUR ON
PAIN AND MATERNAL COMFORT AMONG
PARTURIENT MOTHERS AT SRI RAMAKRISHNA
HOSPITAL, COIMBATORE**

REG. NO. 30101423

A Dissertation Submitted to
The Tamilnadu Dr. M.G.R. Medical University,
Chennai-32.

In Partial Fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN NURSING

2012

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I humbly submit this work into the hands of **ALMIGHTY**.

Abstract

Effectiveness of warm compress on pain and maternal comfort during labour among parturient mothers was assessed at Sri Ramakrishna Hospital, Coimbatore. Quasi experimental pre testpost testcontrol group design was adopted to meet the objectives of the study. Convenient sample of 18 mothers were included for the study. Selected samples were randomly assigned to experimental and control group. Warm compress was applied on lower back at 4-5, 6-7, 8-10cms of cervical dilatation and over the perineum during second stage of labour. Numerical Pain Rating Scale and Visual Analogue Scale for Total Comfort were used to assess the pain and maternal comfort respectively. Appropriate statistical techniques were used to test the hypothesis. The results revealed that warm compress significantly reduced pain and promoted maternal comfort during labour.

PAIN AND MATERNAL COMFORT

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Effect of warm compress on pain and maternal comfort during labour among parturient mothers at Sri Ramakrishna Hospital, Coimbatore

Pain experienced by women during child birth is usually perceived in higher intensity than expected. Management of pain is the foremost goal while caring for a normal woman in the intra-partum period. There are two approaches to manage the pain during labour, that is, pharmacological and non-pharmacological approach. Pharmacological relief measures are directed towards the physical sensation of a person while non-pharmacological methods are directed towards prevention of suffering of body and mind.

Non pharmacological pain management includes a variety of techniques like maternal movement and positions, touch and massage, acupuncture and acupressure, hypnosis, TENS, application of heat and cold, music, aromatherapy relaxation, breathing exercises and others. These measures address not only in terms of physical sensation but also prevent suffering by enhancing the psycho emotional components. This method enhances the mother's self-confidence and gain control over self and thus promotes wellbeing. They also influence the labour progress by reducing the duration of labour. Women who have utilised these measures have stated successful coping with the pain and stress of the labour process and enhanced level of comfort.

Birth is a profound psychosocial experience. Child birth is also viewed as a test of motherhood, a test of personal competence, a peak experience for tolerance and the first act of motherhood. Labour is culmination of the human pregnancy. The process of normal child birth is categorised into three stages from the commencement

of true pain till the full dilatation of cervix, from full dilatation of cervix till the expulsion of the foetus and from expulsion of foetus till the expulsion of placenta. All these stages are important for the nursing care in terms of monitoring the labour progress, attending to the needs of the women, her partner and family and also encouraging the mothers to bear down. Response to labour varies from women to women depending on the nature of the labour, their sense of readiness, the coping style and preparation for labour. Pain and discomfort during labour which parturient mothers experience have impact on how the women view her birth experience.

It is curious to observe that much of research conducted on pain during labour has been focused on the first stage, thus largely overlooking the pain associated with the actual birth or second stage (Sanders, et al., 2005). In the developed world there has been a dramatic increase in caesarean section in the last decade. Fear of pain associated with labour as well as perineal injury is reported as a reason why women may request a caesarean section (Kolas, et al., 2003). Methods of reducing pain and perineal trauma in second stage without resorting to either potentially harmful pharmacological pain relief or major abdominal surgeries would be beneficial to women and indeed to the society as a whole.

Application of heat and cold for pain relief are also effective non pharmacological interventions. They are easy to use, inexpensive, require no prior practice and have minimal negative effects when used appropriately. Heat is applied not only to relieve pain during labour but also to enhance the comfort of mothers by relieving chills or trembling, decreases joint stiffness, reduce muscle spasm and increase connective tissue extensibility. Heat application can be done over the

women's back, lower abdomen, groin or perineum. All were found to be effective. Warm waterbottle, heat rice pack, warm compress, electric heating pad, warm blanket are the commonly used heat sources for promoting the comfort of the mothers. According to Benda lane,(2009) heat packs have measurable therapeutic effect and decrease pain during child birth, especially warm moist compress in second stage of labour when baby's head stretches the perineum. Along with reducing pain it also has a long term effect of prevention of urinary incontinence in post partum.

Heat stimulates the heat perception of skin and deeper tissue and it reduces the pain as proposed in **Gate Control Theory**. The other effects of heat therapy are probably shortening the duration of labour. Superficial forms of heat in various forms are popular with labouring women. Mothers experience pain in the lower back both during and in between the contractions. It is known as back labour. Women report that the advancement of baby's head and stretching of the perineum together cause severe pain and thus cause a negative impact regarding the second stage (McKay, Barrows & Robert, 1990). Recent studies show that heat pack used on mothers back during labour will have positive effect to reduce intensity of pain (Benda Lane, 2009). If the mother is solely focussing on her labour pain her perception will be also painful. However when there is a competing sensation that takes her mind elsewhere, she will not be able to concentrate on her labour pain completely. Wet warm compress gives her a competing and more pleasant sensation over labour pain. This will distract her and make her more comfortable and satisfied.

“Nowhere in the history do we find a beginning, but always a continuation. How then shall we understand the end, if the beginning remains a mystery?”(Bachofen,1967). The Lamaze international is an organization which promotes the philosophy of personal empowerment along with child birth education. Modern child birth classes today teach expectant mothers to work with labour to reduce pain associated with child birth.

1.1.NEED FOR THE STUDY

Pain is a common phenomenon and an inevitable part of the child birth process. Being comfortable during hospitalization is the right of the client and is the responsibility of the health care providers. The majority of women want no pharmacological pain relief, or they may want to delay its use as long as possible due to the possible side effects. Some prefer pain medications also. Continuous professional support may be the most powerful non pharmacological method for managing labour pain(Hodnett,1998). Heat therapy is one of the commonly used non pharmacological methods for labour pain reduction and promoting comfort. Usage of this measure during labour is simple, cheap and previous training is not required.

Doug Laube, Former President of American College Of Obstetrics and Gynaecology states that, “Midwives offer evidence based care services. In today’s high tech approach, midwifery services provided the individualized care women need.”Judy Norsigian, Executive Director of Boston Women’s Health Book Collective states that “Studies demonstrate over and over again, that midwives offer not only the high quality of care to women, but also enormous satisfaction”

Heat induces the uterine activity without causing any abnormal change in fetal heart rate (Khamis and colleagues,2008). Perineal preservation and maternal comfort during labour are the important goals of the practicing obstetricians and midwives. Pain experienced during labour can also have an impact on how a woman views her experience of birth.

Behmanesh, et al.,(2007) conducted a study to assess the effect of warm compress on pain severity and delivery outcomes among 64 parturients when administered during first and second stage of labour. Mc Gill Pain scale was used to assess the intensity of the pain. The study concluded that heat affects the pain intensity during labour.

Dahlen, et al., (2007) conducted a study to assess the effect of warm compress on perineum to reduce the perineal trauma and improve maternal comfort. Study found that the warm compress reduces the third and fourth degree perineal trauma and increases maternal comfort. There is no evidence that the pain in the labour is beneficial to either mother or to foetus. Deleterious effect of pain may cause distress to the mother with exhaustion and loss of morale. Maternal exhaustion could result in prolonged labour leading to fetal acidosis. Therefore it is logical to manage pain in labour. Because of these reasons, the researcher selected the study to reduce pain during labour and improve maternal comfort.

1.2.STATEMENT OF PROBLEM

EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AND MATERNAL COMFORT AMONG PARTURIENT MOTHERS AT SRI RAMAKRISHNA HOSPITAL, COIMBATORE

1.3.OBJECTIVES

1.3.1. To assess the intensity of pain and level of comfort of parturient mothers before intervention

1.3.2. To assess the intensity of pain and level of comfort of the mothers after intervention.

1.3.3. To associate findings with the demographic variables.

1.4.OPERATIONAL DEFINITIONS

1.4.1. Effect

Assessing the physical and psychological changes in parturient mothers i.e; pain perception and maternal comfort during labour as evidenced by the score obtained on using numerical pain rating scale and visual analogue scale for total comfort.

1.4.2. Warm compress

Warm compress is a cotton pad dipped in boiled tap water of bearable temperature of 38-44°C (100-111°F) and is applied under pressure against low back and perineum for a period of 20 minutes. Compress is given over low back in every 4-5 cm, 6-7cm, 8-10cm cervical dilatation and in second stage sterile cotton pad were kept against perineum. Cotton pads will be changed if it gets soiled or not having adequate temperature.

1.4.3. Pain

Pain is the by-product of the uterine contractions and other physiological changes in normal labour. These changes are putting on an unpleasant feeling on parturient mothers. Pain in labour has increasing intensity, duration and it also affects the quality of life. Pain is measured using numerical pain rating scale.

1.4.4. Maternal comfort

It is a state of the mother in which no external or internal factors like pain and maternal discomfort from uterine contractions and cervical dilatation can alter the normal physiology of life. Mother has to undergo normal process of labour without any ill effects. Maternal comfort is assessed by using visual analogue scale for total comfort.

1.4.5. Labour

It is the series of events which takes place in the genital organs during the process of expulsion of viable conceptional products out of womb through vagina with all the pain and discomfort over the lower back till complete dilatation of the cervix and perineum during the expulsion of the foetus. Labour should take place without any undue prolongation, regular progress of cervical dilatation and descent of the head.

1.4.6. Parturient

Women aged between 18-35 years who are labouring with viable conception and at term without any history of complications or maternal medical illness and have given consent to participate in the study at Sri Ramakrishna Hospital labour room.

1.5.CONCEPTUAL FRAMEWORK

Roy's adaptation model

Roy's adaptation model was developed by Sister Calista Roy in 1964. In her theory she focuses on a person's adaptation to major changes as the main concept. System, adaptive mechanism and adaptive models are used to address these elements. Input is defined as a stimulus which comes from the environment or within the person. It also includes a person's adaptation level (a range of stimuli to which a person can adapt easily).

(i) Input

It is the stimuli which come from the environment or within the person. It includes the ability of the person to adapt to a condition easily. Each person's adaptive level is unique and is constantly changing. Here the researcher implements warm compress during labour on pain and maternal comfort.

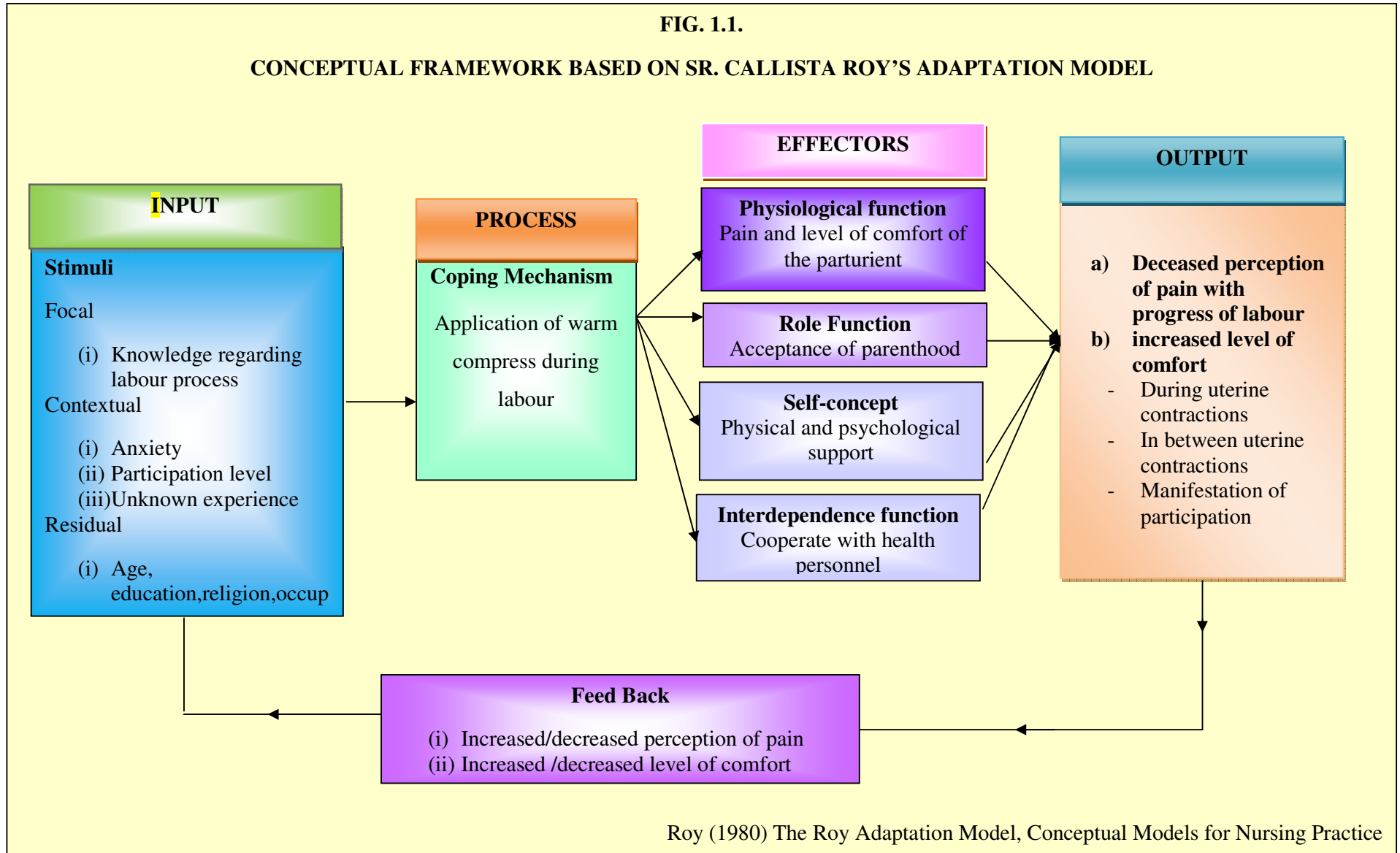
(ii) Throughput

Throughput makes use of control mechanisms used by a person for adaptation. The physiological responses, self-concept and role function are involved in adaptation. It includes the participant participation in warm compress, monitoring of physiological changes and progress of labour. The researcher scores the pain perception and comfort level of the mother before and after the intervention.

(iii) Output

Output is the outcome experienced by the mother in terms of behaviour. These are categorised as adaptive responses and ineffective responses. Effective adaptive response includes reduced pain perception of the mothers. Ineffective responses are increased pain perception and discomfort as the labour progresses. These responses provide feedback for the system.

FIG. 1.1.
CONCEPTUAL FRAMEWORK BASED ON SR. CALLISTA ROY'S ADAPTATION MODEL



1.6.PROJECTED OUTCOME

Warm compress during labour will reduce the parturient mother pain perception and discomfort. It promotes high quality of life.

REVIEW OF LITERATURE

The present chapter illustrates the literatures pertaining to the study. This was made under following headings.

- 2.1. Literature related to pain perception and comfort of the individual.
- 2.2. Literature related to non pharmacological methods of pain relief during labour.
- 2.3. Literature related to effect of warm compress on labour pain and maternal comfort.

2.1. Literature related to pain perception and comfort of the individual.

Few studies have focused specifically on the perceptions of pain during child birth in culturally diverse women.

Ranta & Spalding(2002) conducted a prospective survey of 1091 Finnish parturient to ascertain the mother's expectations for labour pain relief, to measure the actual pain during all stages of labour and to question their satisfaction and the adequacy of pain relief. Over 80% of the women described their pain as severe to intolerable, only 4% of the multiparous had low pain score (0-2). Dissatisfaction with childbirth experience was very high and was associated with instrumental deliveries.

Lowe(2002) has detailed numerous issues related to self efficacy, personal control and pain management among child bearing women. Her land mark work emphasizes the complexity of the multiple variables that influence the pain of giving birth like previous experiences, supporting system and coping ability.

Lynn, Inaam, Sonia, Robin &Katri(2002) conducted a study on pain perception during child birth among culturally diverse women who lived in North and

Central America, Scandinavia, Middle East, China and Tonga. The pain experiences of culturally diverse child bearing women are described based on a secondary analysis of narrative data from phenomenological studies for understanding the participants attitude towards perception and the meaning of child birth pain. The study participants were interviewed in the hospital after giving birth or in their home within the first week after having a baby. Culturally bound behaviour in response to child birth pain was articulated. The variety of coping mechanisms was used by women to deal with the pain. The researchers stated that cultural diversity was expressed in women's perception of pain, satisfaction and coping mechanisms.

Studies conducted on pain perception of women by various researchers namely, Brown & Lumley (1998), Goldberg, Cohen & Leiberman (1999) and Nichols & Gennaro (2000) had the following findings. These studies depended on the retrospective recall, previous emotions and expectations concerning pain that overshadowed the positive maternal and new born outcomes. There was a significant variance in labour pain associated with confidence in the women's ability to handle labour, preparation for child birth and the physiological intensity of labour.

Simkin(1995) states that experiencing pain during labour is a universal feature of child birth. The degree of pain and each woman's ability to cope with it will depend on a number of factors. These include the women's experience, her physiological make up, the degree of preparation for birth, her cultural beliefs and practices, the quality and strength of uterine contractions, the support she receives during labour and birth and the position of the foetus.

Green (1993), Harrison(1991), Lee & Essoka(1998), Morse& Park (1988),Pathanapong(1990), andWeisenberg & Caspi (1989) conducted a cross cultural studies on child birth pain among three groups of Arab women, Bedouin women. There was an absence of pain behaviour on visual analogue scale among the participants.

Gijsbers & Niven (1993) conducted a study to identify the similarities in the use of verbal descriptors of pain across cultural groups of labouring women. The word pain was used to characterise the most intense discomfort, the word hurt used for less severe discomfort, the word ache used for least severe pain. Pain perception was found to be composed of highly interactive emotional, cognitive, as well as sensory components.

Stephen, Donald & Michael (1985) conducted a study on effect of age on pain sensitivity. Study assessed the individual's pain perception with painful thermal pain stimuli. Temperatures used were 43°C, 45°C, 47°C, 48°C, 49°C, 51°C. Participants rated the perceived pain to thermal stimuli in visual analogue scale. The findings demonstrated that the middle aged adults showed low sensory sensitivity and older adults under rate low and over rate higher intensity of contact heat when compared with younger adults.

Kenneth (1972) analysed the pain tolerance score of 41119 subjects who took the automated metaphasic screening for a period of one year. The results demonstrated that pain tolerance decreases with age. Men tolerate more pain than women, Whites tolerate than Orientals and Blacks in intermediate position. When the

results of the study were compared with other works it appeared that tolerance increased in case of cutaneous pain than deep pain.

2.2. Literature related to non pharmacological methods of pain relief during labour.

Bharthi (2010) conducted an experimental study among primi mothers on effective nursing interventions on pain during labour. Aim of the study was to compare the pain perception of the mothers before and after intervention during first stage of labour. Nursing interventions used were massage, breathing and position to primi mothers in experimental and routine care to the control group. Samples involved were n=60 and assigned randomly in both experimental (n=30) and control group (n=30). A structured questionnaire was used for assessing demographic variables and visual analogue scale as combined numerical pain assessment scale. Study found that selected nursing interventions (massage, breathing exercises and positions) to the primi mothers were effective in reducing their labour pain perception.

Valiani, Shiran, Kianpour & Hasanpour (2010) studied effect of reflexology on certain features and outcome of labour on the primiparous women. In this quasi experimental study, 88 primiparous women were randomly selected in two groups. The short form Mc Gill Pain Questionnaire was used to assess the intensity of pain during labour. Study shows that reflexology can lead to decrease in labour pain. It also decreases length of active phase of labour and also reduces the rate of bleeding following delivery.

Chantharapat, Petpichetchian&Hatthakef (2009) conducted a study to assess the effect of Yoga on maternal comfort- labour pain and birth outcome. 66 pregnant participants over the age of 18 completed the study. Yoga classes were given at 23-28, 30, 32, 34, 36 and 37 weeks of gestation. Participants were asked to participate it at home. Visual Analogue Scale for Total Comfort to measure the level of comfort, Visual Analogue Sensation of Pain Scale, Maternal Comfort Questionnaire, Pain Behaviour Observational Scale were used as the tools to measure mothers pain perception and level of comfort during labour. Findings of the study showthat Yoga was effective in decreasing pain and shortening of length of labour.

Smith, Collin, Cyna&Crowther(2006) conducted a study to assess the effect of alternative and complimentary therapies in labour pain management. 1537 parturient women were selected randomly for the study. Metaanalysis was performed to analyse maternal satisfaction, use of pharmacological pain relief, maternal and neonatal adverse outcomes. Trial involved acupuncture (n=496), audio analgesia (n=24), acupressure (n=172), aromatherapy (n=22), hypnosis (n=729), massage (n=60), relaxation (n=34). Result found that acupressure and hypnosis are more beneficial for management of pain during labour compared to other measures.

Nikodem, Clueff, McCanlish &Burns (2004) conducted a study on effect of immersion in water during pregnancy, labour or birth. This randomised control trial aimed to assess the effect of water immersion on maternal, fetal, neonatal and caregiver outcome. Totally 8 trials were conducted by involving 2939 women. Study compared both group during first stage of labour and found less pain perception of mothers in intervention group compared to other.

Lee, Chang & Kang (2004) conducted a study to assess the effect of SP6 acupressure on labour pain and length of delivery time in women during labour. Randomised control trial involved 75 women in labour and randomly assigned to both experimental and control group. Duration of the intervention was 30 minutes. Labour pain was measured four times by using structured questionnaire and visual analogue scale before and after intervention. Findings show that SP6 acupressure was effective in reducing pain during labour and shortened the length of delivery.

Simkin & April (2004) conducted a study on non pharmacological approaches in midwifery management of labour pain. Review made on 13 non pharmacological methods used to relieve pain and reduce suffering in labour. Non pharmacological measures evaluated are acupuncture & acupressure, massage & touch, TENS intradermal water block, relaxation & breathing, heat & cold, hypnosis, aroma therapy, music, child birth education, maternal movement & position, continuous labour support, bath in labour. Study result found that all the measures promote satisfaction among majority of users. Heat is typically applied to woman's back, lower abdomen, groin or perineum. Heat source found effective are hot water bottle, heated rice filled sock, warm compress, electric heating pad, warm blanket and warm shower.

Labrecque, Nouwen & Rancourt (1999) conducted a randomised control trial of non pharmacological approaches for relief of low back pain during labour. Study involved 34 women suffering from low back pain during labour and assigned randomly in three treatment group. Intervention used in study was intracutaneous sterile water injection, TENS and standard care such as massage, whirlpool bath, and liberal mobilization. Pain intensity was evaluated with visual analogue scale and

Labour Agency Scale and labour and delivery satisfaction index for evaluation of control and maternal satisfaction. Study showed that intracutaneous sterile water injection was more effective than TENS and standard care measures.

Diazag, Schwarcz, Fescina & Caldegro (1980) conducted a study involved 365 term normal term labours to assess the effect of position on labour outcome. In these 145 cases the women were standing, sitting, walking at will during the first stage. Whereas 224 remained lying in bed during the whole labour. Study found no significant effect on physiological timing of rupture of membrane. Whereas it shortened the duration of first stage of labour in 25% this may reach 34% in the nulliparous. Cephalic moulding is not increased; incidence of forceps delivery diminished and perinatal mortality and morbidity is not increased. These measures reduced the incidence of pharmacological intervention and improved maternal comfort.

Flynn, Kelly, Hollis & Lynch (1978) conducted a randomised prospective study of 68 women in labour on effect of ambulation in labour. Half of the samples were allotted to an ambulation group and half in recumbent group. Study result shows that ambulation has positive effect in shortening the duration of labour, need for analgesia is significantly less and foetal outcome is better in ambulation group than recumbent group.

2.3. Literatures related to effect of warm compress on labour pain and maternal comfort.

Fahami, Behmanesh, Valini& Ashouri (2011) conducted a study on effect of heat therapy on pain severity in primiparous women. Clinical trial involved 64 low

risk nulliparous women were randomly assigned in to two group heat therapy and in control group or routine care group. Warm bag was used for the therapy group over low back from cervical dilatation of 3-4cm to the end of first stage and over the perineum at second stage. Mc Gill Pain Questionnaire was used to assess the intensity of pain. Result of the study shows that warm compress has significant effect on reducing labour pain.

Davem(2009) undertook a study toknow the effectiveness of non pharmacological strategies in relieving labour pain intensity and improving maternal satisfaction. Some selected non pharmacological strategies evaluatedinclude warm compress and warm bath, touch and massage, acupressure and breathing techniques etc. The results demonstrated that warmth for labouring women was found to be more effective and mothers had a high maternal satisfaction by decreased pain perception during labour.

Behmanesh, Pasha&Zeinalzadeh (2008) conducted a study to assess the effect of heat therapy on labour pain severity and delivery outcomes among 64 primiparous women's who attended the affiliated hospitals of Babool University of Medical Science. The participants were assigned to both experimental and control group. Warm compress was administrated to experimental group at 4-5 cm, 6-7 cm, 8-10 cm, andduring second stage of labour while routine care was provided to control group. Intensity of pain was assessed by using Mc Gill pain questionnaire after the second stage of labour. Results of the study showed that, there was a significant reduction in the pain intensity among those in the heat therapy group during the first and second stage of labour and it also influenced the duration of labour.

Bond(2008) conducted a study on potential therapeutic effect of warm compress and perineal massage on the third and fourth degree lacerations, pain during birth and post partum urinary incontinence. All mothers in active labour were randomly selected for the intervention late in the second stage. Usually a burning sensation accompanies acute perineal stretching, vaginal distension, and foetal head pressure happens during second stage of labour. Warm water of temperature 104-113°F (40-45°C) compress was applied over the low back and perineum. Heat increases blood supply to the area by vasodilatation, promote relaxation, encourages tissue stretching or extensibility and provide some degree of pain relief. Massage over perineum influences the sensation and pain perception.

Daheln, Homer, Cooke, Apton, Nunn& Brodri (2007) conducted a study on warm compress during second stage associated with less pain, maternal comfort and perineal outcome. In the study 717 nulliparous women were selected randomly, ofwhich 360 and 357 subjects were assigned to the experimental and control groups respectively. The warm compress group received a saturated perineal pad with tap water heated to 38-44°C (100-111°F) was held against the perineum until the birth of the fetal head. The researcher assessed the extent of perineal laceration, pain and maternal comfort etc. Also ongoing assessment was carried out on the I and II day of post partum and following 2 months for urinary incontinence and other discomfort. Women who received warm compress expressed lesser pain and increased comfort during labour. Intervention failed to decrease the likelihood of laceration.About 80% of women in both group required sutures.The control group reported bad/worst pain in life. Subjects in the experimental group were less likely to report urinary incontinence

at 3 months of postpartum and had a significant reduction in the anal sphincter tear and less pain on I and II post partum days.

Hasting, Vincent, Emeis & Francisco (2007) conducted a retrospective descriptive analysis of pregnancy and child birth data among 510 women of singleton uncomplicated cases for the identification of factors related to perineal trauma during child birth. The researcher found that episiotomy was related to parity, maternal status, infant weight, fetal bradycardia, prolonged second stage and lack of perineal measures. Factors that protect the perineal trauma were massage, warm compress and birthing in lateral position. Rate of episiotomy and perineal trauma were low in studies conducted with preference of warm compress, perineal support and side lying position.

Simkin (2007) conducted a study on reducing pain and enhancing labour using non pharmacological interventions. The author detailed on many of the non pharmacological methods that were simple, effective, low cost to reduce pain and can be initiated by nurses, midwives and physician with potential benefit to improve labour progress, reduction in using riskier medications and patient satisfaction. The pain relief methods that were evaluated included application of heat & cold, warm compress, acupuncture, warm bath massage, positioning and aromatherapy. These methods were categorised by the mechanism through which they reduce pain or improve labour progress and diminishing the painful stimuli. The study concluded that all the methods were found to be effective in reducing pain perception of the women and thereby reduce the negative concept of pain.

Julia, Tim & Rona (2005) surveyed on the techniques to reduce perineal pain during spontaneous vaginal delivery and perineal suturing by use of pharmacological and non pharmacological methods that are implemented by midwives during second stage of labour and perineal repair. Postal survey of self completed questionnaire was carried out in 219 maternity units. In 70 maternity units hot packs were used, 44 centres used cold pack and perineal massage in 109 centres. But most of the hospitals were using anaesthetics to control perineal pain.

Alber, Sadler, Vedrik, Teaf & Perlte (2003) conducted a study that assessed the use of episiotomy and maternal comfort during labour using midwifery care measures to reduce the incidence of genital tract trauma at birth. The researcher randomised 1211 healthy parturient mothers at University of New Mexico teaching hospital into three groups with three types of care such as warm compress over perineum, massage with lubricant, no touching of head till the crowning of the foetus. After the birth, the midwives estimated the trauma of genital tract and found an equal distribution of genital trauma among all the individuals. Mothers reported increase maternal comfort with warm compress.

Musgrove (2003) conducted a study to examine effect of warm perineal pack on perineal preservation during second stage of labour. Women participated (N=71) in the study were assigned to the experimental and control groups, 36 and 35 respectively. Results showed that 70% of the recipients of hot pack felt less pain and 80% reported more comfort with warm pack. In the experimental group 70.5% women required no perineal suturing, being intact or superficial first degree tear. Researcher recommended including this in practice in the midwifery while caring

since it is the most effective and cost effective pain relief method for the women in labour.

Renfrew(1988) conducted a study on effect of warm compress during second stage of labour on perineal outcome. Warm compress were administered to perineum during second stage of labour in both experimental and control group received usual routine nursing care. Results of the study showed that warm compress was effective in reducing the incidence of second and third degree laceration of perineum, improved the maternal comfort and resulted in higher levels of satisfaction rate.

Jouppila, Tervila&Gestatsson (1983) conducted a study on Epicutaneous application of A2358 compress containing Ketocain for pain relief during labour with identical warm compress without anaesthetics. A multi centred double blind trial was conducted among 147 primi gravida who were treated for low back pain during first stage of labour. A2358 compress applied to sacral low back for 72 parturients for one hour while 75 mothers were treated with ideal warm compress without anaesthetics. The results showed that low back pain was alleviated for about half of the mothers are at 0.5, 1 and 1.5 hours after the application of both compress but the pain relief was the same for both treatment groups.

METHODOLOGY

The methodology of the present study includes research approach, research design, research setting, study population, criteria for sample selection, sampling technique, variables of the study, description of tool and technique of data analysis & interpretation.

3.1. RESEARCH APPROACH

The present study aimed to assess the effect of warm compress during labour, on pain and maternal comfort among parturient mothers. Hence, a quantitative approach was considered to determine the effectiveness of warm compress.

3.2. RESEARCH DESIGN

Quasi experimental pre and post test control group design was used. Design was found to be appropriate to meet the objectives of the study.

3.3. RESEARCH SETTING

The study was conducted in the labour ward at Sri Ramakrishna Hospital, Coimbatore. The bed strength of the labour ward is 20. Approximately forty normal vaginal deliveries are conducted per month.

3.4. POPULATION

The parturient mothers in the age group of 18-35 yearson active labour admitted for safe confinement preferably, for normal vaginal delivery and those who were willing to participate in the study at Sri Ramakrishna Hospital, Coimbatore.

3.5. CRITERIA FOR SAMPLE SELECTION

3.5.1. *Inclusion criteria*: Parturient mothers between 18-35 years, at the beginning of the active phase of labour, gestation age between 37-41 weeks with singleton pregnancy with cephalic presentation of the foetus.

3.5.2. *Exclusion criteria*: Mothers who have discomfort with warm compress, chronic disease such as cardiopulmonary disease, diabetes mellitus, skin disease, psychotic and diagnosed anatomical disorders, women with polyhydramnios and oligohydramnios, inflammation and eczema over thigh region, mothers with CPD and reduced foetal movement, women with fever and prone to get haemorrhage, bleeding disorder and pregnancy induced hypertension.

3.6. SAMPLING

Convenient samples of pregnant women in active labour with 4-5cm cervical dilatation, without any medical or obstetric complication were selected after getting informed consent. The group was randomly assigned to experimental and control group.

3.7. VARIABLES UNDER STUDY

Application of warm moist pack with temperature maintained between 38-44°C(100-111°F) was the independent variable. Pain and comfort level of the parturient mothers was taken as the dependent variable.

3.8. MATERIALS

3.8.1. *Demographic Data*: The baseline data on age, region, education, occupation of the parturient mothers were collected from the mothers etc.

3.8.2. Obstetric Data: This includes gestational age, duration of labour, medical complications, assessment findings like fetal lie, attitude, presentation, position, engagement and status of perineum after delivery.

3.8.3. Partograph: Partograph is the graphical representation of the progress of the labour. It was derived by Freidman(1954), later it was modified by Philpott and Caste(1974). It is also called as cervicograph. Modified WHO Partograph was used in this study. It helped to monitor the labour closely by hours of labour, fetal heart rate, consistency of the amniotic fluid, moulding, cervical dilatation and descent of the head, contractions, infusion of drugs & intravenous fluid, vital signs and urine test for protein, acetone & volume (Dutta, 2006).

3.8.4. Numerical Pain Rating Scale: Numerical pain rating scale by Mc Caffery & Beebe (1993) can be used graphically, visually or verbally. This scale consists of a horizontal line that is anchored by numbers 0 to 10. Here the clients are instructed to rate on a 10 point rating scale. 0 indicates no pain and 10 is the worst pain experienced during labour. Validity index of the scale is 0.91 and has high predictive validity.

3.8.5. Visual Analogue Scale for Total Comfort: In this study the Visual Analogue Scale for Total Comfort developed by Wewers & Lowe (1990) used to measure maternal comfort during labour was used. It is a 100mm line from strongly agree to strongly disagree. Clients were instructed to mark their level of comfort. The scale has a validity rate of 0.75 and the inter reliability of 0.90.

DESCRIPTION OF INTERVENTION

An exploration of the literature describing perineal care is undertaken from the time of Hippocrates (460- 370BC), through to the modern day literature. Obstetrician Soranus from Alexandria described in detail the equipment a midwife needs for normal labour which includes oil for injection and lubricant, warm water in order to clean the parts, warm fomentations for alleviation of pain, sponges for sponging off, pieces of wool in order that the woman's parts be covered (Temkin, 1956). Soranus described what one must do during the delivery. One must first soothe the pains by touching with warm hands and afterwards drench warm pieces of cloth with warm, sweet olive oil and put them over the abdomen as well as the labia and keep them saturated with the warm oil for some time and one must also place rubber bladder filled with warm oil alongside (Temkin, 1956). Warm flannel was used to apply warmth. There is frequent mention of the use of warm water as a therapeutic modality, which is also available in abundance in Salerno with its aqueducts and abundant bath houses (Green, 2002). Nowadays child birth is the common reason for the hospitalisation among women. In over 3 million child births, 76% of cases are normal deliveries.

Articles

1. Sterile tray with tray cloth contains

Cotton pads to apply warm compress

Bowl to mix hot and cool water

Drape cloth

2. Clean tray with tray cloth contains

Stainless steel bowl

Cotton pads

Jugs 2 ;one with cool water and one with hot water.

Lotion thermometer

Lubric gel

Glove

Dettol soaked water

Kidney tray

Procedure

Application of warm moist compress means placing wet warm cotton pad over low back initially and then over the perineum in second stage of labour. In this study the temperature of the compress was maintained between 38-44°C throughout the procedure for a period of 20 minutes. Procedure was started from cervical dilatation of 4-5cm's.

Preliminary assessment

Assess the condition of the mother

Check doctor's order for any contraindication

Identify patient by calling name

Get informed consent

Check the availability of the articles and collect and arrange near the labour table.

Provide privacy.

S.No	STEPS	RATIONALE
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1	Wash hands	Prevent cross infection
2	Provide comfortable position	To perform vaginal examination
3	Wear gloves	To prevent cross infection
4	Drape the patient	To expose only the area where to do the procedure
5	Assess the condition by per vaginal examination	To identify cervical dilatation 4-5 cm, 6-7 cm, 8-9 cm and second stage.
6	Remove soiled glove and wear another after vaginal examination	To prevent contamination of the sterile field.
7	Mix the hot and cool water in a bowl and check the water temperature	To prevent burning
8	Dip the clean cotton pad in warm water.	To relieve pain and to improve maternal comfort
9	Apply warm pads over low back for twenty minutes at 4-5 cm, 6-7 cm and 8-10cm of cervical dilation.	To reduce pain perception and to improve maternal comfort.
10	Open sterile pack and apply warm compress over perineum in second stage of labour.	To maintain warmth and asepsis
Note : change the pads if it becomes cool and dirty		
11	Clean and replace articles after the procedure.	To keep the articles ready for next use.
12	Record the procedure.	

3.9. HYPOTHESES

H1: There will be a significant decrease in the pain after application of warm compress

H2: There will be a significant increase in maternal comfort after the application of warm compress.

3.10. PILOT STUDY

Prior to main study pilot study was conducted to check the feasibility practicability, validity and reliability of the tool. The study was conducted at Sri Ramakrishna Hospital, Coimbatore. Data collection was done for a period of ten days. Convenient sampling of four subjects were selected and randomly assigned in both control and experimental group. Assessment of maternal pain perception and level of comfort was done before intervention with Numerical Pain Rating Scale and Visual Analogue Scale for Total Comfort. After assessment warm compress was applied to low back for a period of twenty minutes at 4-5 cm, 6-7cm and 8-10 cm cervical dilatation and over perineum during second stage of labour. Post test was done after the intervention using the same instruments. Results of the pilot study revealed that warm compress has significant positive effect on maternal pain perception and level of comfort.

3.11. MAIN STUDY

Main study was conducted to meet the objectives of the present study. The data was collected for a period of 30 days at Sri Ramakrishna Hospital, Coimbatore from 20th June to 20th July, 2011. A convenient sampling of 18 parturient were selected and randomly assigned in both experimental and control group. Mothers who got admitted for safe confinement in the hospital were chosen and informed consent

was obtained before the procedure. Totally four interventions were prescribed and warm compress applied at 4-5 cm, 6-7cm and 8-10 cm of cervical dilatation to low back and over perineum during second stage of labour for a period of twenty minutes. Temperature of the water was maintained between 34-44°C (100-111°F) throughout the procedure. Assessment of maternal pain perception and level of comfort was done using Numerical Pain Rating Scale and Visual Analogue Scale for Total Comfort, before and after the intervention.

3.12. TECHNIQUES OF DATA ANALYSIS AND INTERPRETATION

Frequency table were formulated for all significant demographic data. Both descriptive and inferential statistical methods were adopted for data analysis. The collected data was analysed by using 't' test to find out the effectiveness of warm compress during labour on pain and maternal comfort among parturients.

DATA ANALYSIS AND INTERPRETATION

The present chapter deals with method of data analysis and interpretation. Data were collected from 18 parturient mothers on pain and maternal comfort before and after warm moist compress during labour. The study was conducted at Sri Ramakrishna Hospital, Coimbatore.

The data collected were grouped and analyzed using descriptive and inferential statistical method. Analyzed data is presented in the form of tables and graphs.

SECTION – I

4.1. BASELINE DATA PRESENTATION

The socio-demographic characteristics are described in terms of age, religion, educational status and occupational status with number of participants and percentage in both experimental and in control group.

TABLE 4.1
DEMOGRAPHIC DISTRIBUTION OF PARTURIENT MOTHERS

(N=18)

Demographic Variables	Experimental Group		Control Group	
	No. of Participants	Percentage (%)	No. of Participants	Percentage (%)
Age (in years)				
18-23	1	11	3	34
24-29	7	78	4	44
30-35	1	11	2	22

(N=18)

Demographic Variables	Experimental Group		Control Group	
	No. of Participants	Percentage (%)	No. of Participants	Percentage (%)
Religion				
Hindu	6	67	8	89
Muslim	3	33	1	11
Education				
Primary	1	11	-	-
Secondary	3	33	4	45
Bachelor degree	4	45	3	33
Master degree	-	-	1	11
Ph.D.	1	11	1	11
Occupation				
House Wife	8	89	9	100
Office	1	11	-	-

Table 4.1 shows that 11 % of the mothers in experimental group were between the age group of 18-23 years, 78 % of mothers were between 24-29 years of age and 11 % of mothers were in the 30-35 years of age category. In control group 34 % of mothers were between 18-23 years, 44 % of mothers were between 24-29 years and 22 % of mothers were between 30-35 years of age category.

Data on religion reveals that 67 % of mothers were Hindus and 33 % of mothers were Muslims in the experimental group. In control group 89 % of mothers were Hindus and 11 % of mothers were Muslims.

Educational Status of the experimental group reveals that 11 % of mothers had primary educational status, 33 % of mothers had secondary educational status, 45 % had bachelor degree and 11 % of mother's had completed doctoral programme. In control group 45 % of mother's educational qualification was secondary, 33 % of mothers had bachelor degree, 11 % had masters' degree and 11 % completed their Ph.D.

Occupational status of the parturient mothers revealed that 89 % of mothers were housewives and 11 % of mothers were holding office jobs. In control group, all the mothers were housewives.

FIG. 4.1
AGE DISTRIBUTION OF PARTURIENT MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

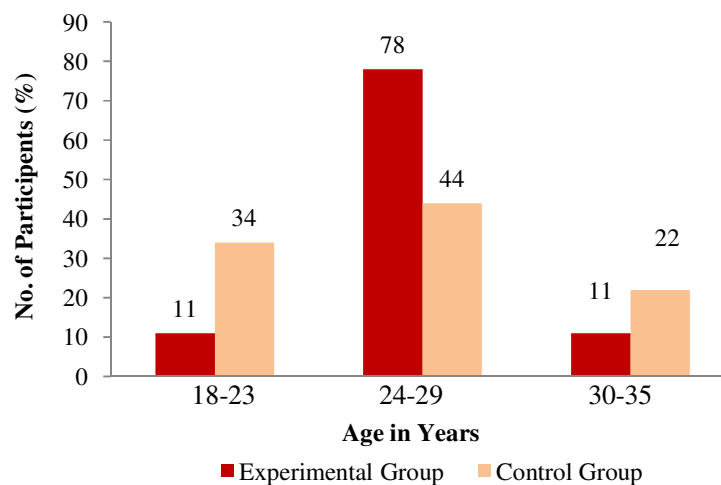


FIG.4.2
DISTRIBUTION OF RELIGION OF PARTURIENT MOTHERS IN
EXPERIMENTAL AND CONTROL GROUP

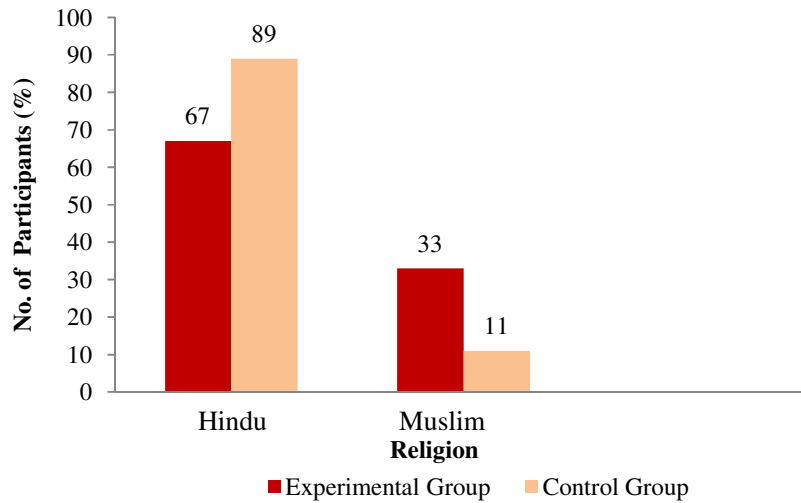


FIG.4.3
DISTRIBUTION OF EDUCATIONAL STATUS OF PARTURIENT
MOTHERS IN EXPERIMENTAL AND CONTROL GROUP

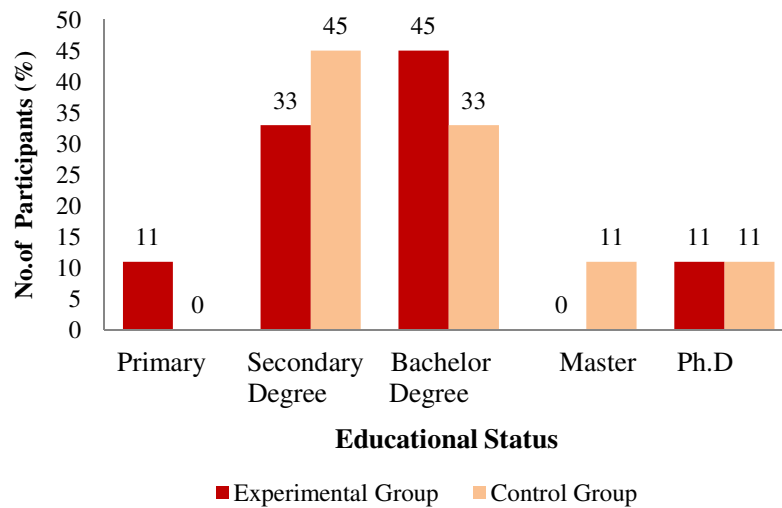
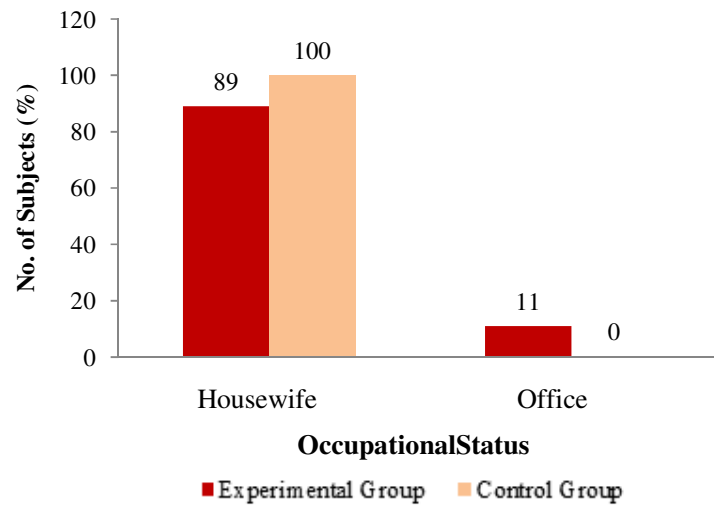


FIG.4.4
DISTRIBUTION OF OCCUPATIONAL STATUS OF PARTURIENT
MOTHERS IN EXPERIMENTAL AND CONTROL GROUP



SECTION – II

4.2. ANALYSIS ON EFFECT OF WARM COMPRESS ON PAIN AMONG PARTURIENT MOTHERS

Paired ‘t’ test was used to find out the effect of warm compress during labour on pain and maternal comfort. Tables representing mean, standard deviation, mean percentage, mean difference, and ‘t’ values of experimental group and control group which indicates the significance of warm compress on pain during labour.

TABLE 4.2
ANALYSIS ON EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AMONG PARTURIENT MOTHERS IN EXPERIMENTAL GROUP

(N= 9)

Numerical Scale Division	Mean	Standard Deviation	Mean Percentage (%)	Mean Difference	‘t’
Pretest	27.83	4.55	70		
				34.45	9.49*
Posttest	14.05	1.77	35		

*Significant at 0.05

The data presented in the table indicates that the mean, posttest pain score was significantly lower than the mean pretest pain perception score of the mothers. The mean pretest score was 70 % and post test score was 35 %. An average decrease of 34.45 was there in the pain score of parturient mothers. Thus, mean value reveals that warm compress was effective in relieving pain during labour. Its significance was assessed using ‘t’ test.

The calculated 't' value 9.49 was compared with table value at 8 degrees of freedom with 0.05 level of significance. The calculated 't' value was higher than the table value. Hence, hypothesis application of warm compress will reduce intensity of pain during labour is accepted. Thus, warm compress has a significant effect in reducing pain perception during labour.

TABLE 4.3
ANALYSIS ON EFFECT OF WARM COMPRESS ON MATERNAL
COMFORT AMONG PARTURIENT MOTHERS IN EXPERIMENTAL
GROUP

(N= 9)

Visual Analogue Scale For Total Comfort	Mean	Standard Deviation	Mean Percentage (%)	Mean Difference	't'
Pretest	274	54.35	69		
				36.89	9.89*
Posttest	126.44	38.40	32		

*Significant at 0.05

The data presented in the table indicates that the mean posttest maternal comfort score was significantly lower than the mean pretest maternal comfort score. The mean pretest score was 69 % and posttest score was 32 %. An average decrease of 36.89 was there in the comfort score of parturient mothers. Thus mean value reveals that warm compress was effective on improving maternal comfort during labour. Its significance was assessed using 't' test.

The calculated 't' value was 9.89, compared with table value at 8 degree of freedom with 0.05 level of significance. The calculated 't' value was higher than the

table value. Hence, hypothesis application of warm compress during labour will improve maternal comfort is accepted. Thus, warm compress has a significant effect in improving level of comfort of the mother during labour.

FIG. 4.5
EFFECT OF WARM COMPRESS ON PAIN AND MATERNAL COMFORT
AMONG PARTURIENT MOTHERS IN EXPERIMENTAL GROUP

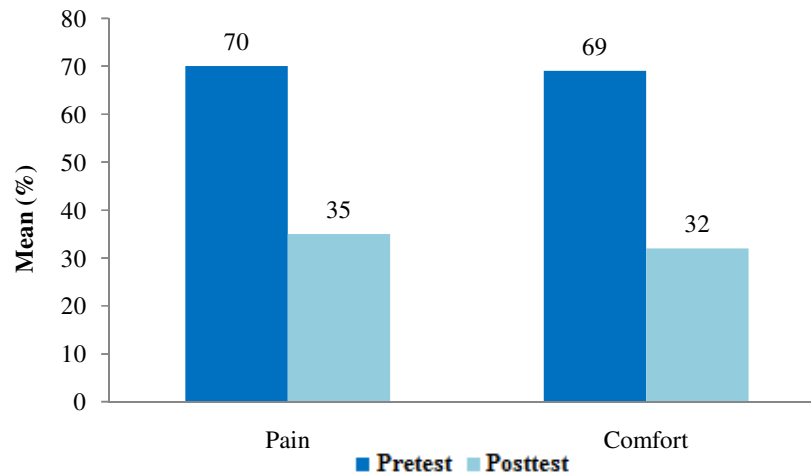


TABLE 4.4
ANALYSIS ON PAIN AMONG PARTURIENT MOTHERS IN CONTROL
GROUP

(N= 9)

Numerical Pain Rating Scale	Mean	Standard Deviation	Mean Percentage (%)	Mean Difference	't'
Pretest	24.50	5.38	61		
				6.25	7.630*
Posttest	27.44	4.84	68		

*Significant at 0.05

The data presented in the table indicates that the mean posttest pain score during labour was significantly higher than the mean pretest pain score. The mean pretest score was 61 % and it increased to 68 % during the post test. This shows an average increase of 6.25. Thus, it proves that the intensity of pain increases when labour progresses.

The calculated 't' value was 7.63, compared with table value at 8 degree of freedom with 0.05 level of significance. The calculated 't' value was less than table value. Thus, it confirms that intensity of pain increases with progress of labour.

TABLE 4.5
ANALYSIS ON MATERNAL COMFORT AMONG PARTURIENT
MOTHERS IN CONTROL GROUP

(N=9)

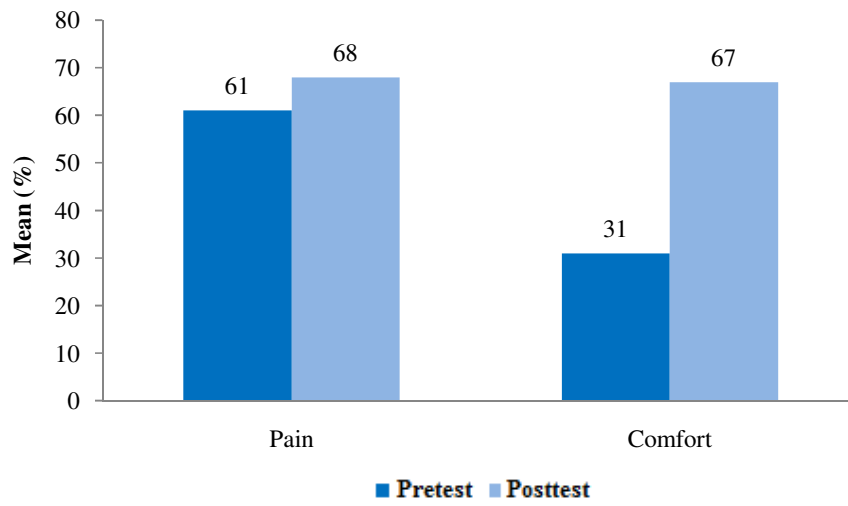
Numerical Pain Rating Scale	Mean	Standard Deviation	Mean Percentage (%)	Mean Difference	't'
Pretest	244	54.16	31		
				6	2.317*
Posttest	268	42.46	67		

*Significant at 0.05

The data presented in the table indicates that the mean posttest maternal comfort score was significantly higher than the mean pretest maternal comfort score. The mean pretest score was 31 % and posttest score was 67 %. This shows an average increase of 6. Thus, it proves that maternal comfort decreases when labour progresses.

The calculated 't' value 2.317 was compared with table value at 8 degrees of freedom with 0.05 level of significance. The calculated 't' value was lesser than table value. Thus, it confirms that comfort level of mother decreases with progresses of labour.

FIG.4.6
PAIN AND MATERNAL COMFORT AMONG PARTURIENT MOTHERS IN CONTROL GROUP



SECTION –III

4.3. COMAPRISON OF POSTTEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON PAIN AND MATERNAL COMFORT

Post test scores of both experimental and control group was done to find the significance of warm compress during labour on pain and maternal comfort among parturients. Analysis was done using ‘t’ test.

TABLE 4.6
COMPARISON OFPOST TEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON PAIN

(N=18)

	Mean	Mean difference	‘t’
Posttest (Experimental Group)	14.05		
Posttest (Control Group)	27.44	13.39	7.78*

*Significant at 0.05

The data presented in the table indicates that the mean posttest score (27.44) of control group was significantly higher than the mean posttest pain score of experimental group (14.05). This shows an average difference of 13.39. Thus, it proves that warm compress was effective among parturient mothers to reduce pain.

The calculated ‘t’ value was 7.78 compared with table value at 16degree of freedom with 0.05 level of significance. Calculated ‘t’ value was higher than table value. Hence, hypothesis warm compress has a significant effect in reducing pain during labour is accepted.

TABLE 4.7
COMPARISON OF POST TEST SCORES OF EXPERIMENTAL AND
CONTROL GROUP ON MATERNAL COMFORT

(N=19)

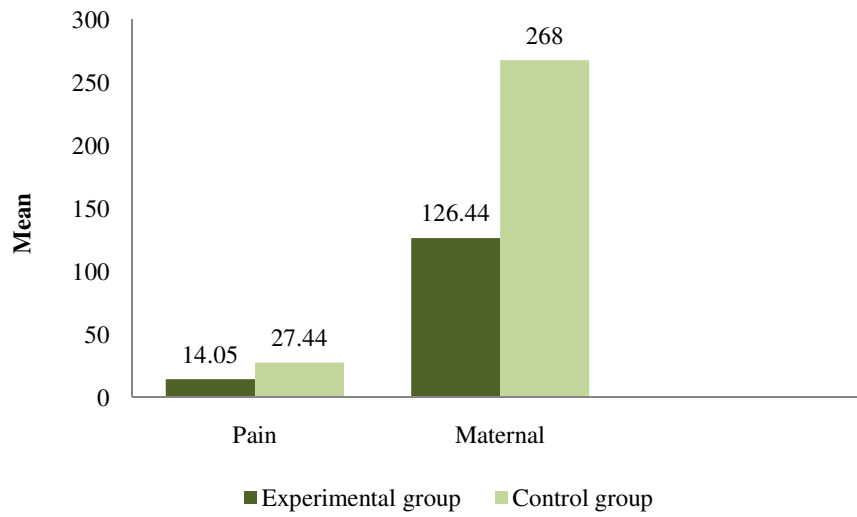
	Mean	Mean difference	't'
Posttest (Experimental Group)	126.44	141.56	7.41*
Posttest (Control Group)	268		

*Significant at 0.05

The data presented in the table indicates that the mean posttest score (268) of control group was significantly higher than the mean posttest pain score of experimental group (126.44). This shows an average difference of 141.56. Thus, it proves that warm compress was effective among parturient mothers to improve mothers level of comfort.

The calculated 't' value was 7.41 compared with table value at 16 degree of freedom with 0.05 level of significance. Calculated 't' value was higher than table value. Hence, hypothesis warm compress has a significant effect in improving level of maternal comfort during labour is accepted.

FIG. 4.7
COMPARISON OF POSTTEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON PAIN AND MATERNAL COMFORT



4.4.RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES WITH PAIN

The 'r' value was calculated to find out the influence of age on individual pain perception and level of comfort. The result reveals that there was no significant relationship between pain perception and level of comfort of the individual with age.

TABLE 4.8
COMPARISON BETWEEN PRIMI AND MULTI MOTHERS ON PAIN AND
MATERNAL COMFORT

(N=18)

	Pain		Comfort	
	Primi	Multi	Primi	Multi
Pretest	73 %	66 %	68 %	69 %
Post test	35 %	35 %	27 %	36 %

Table 4.8 shows that pain perception of the primi mothers was higher (73 %) than multi mothers (66 %), Level of comfort of primi mother was comparatively lower (68 %) than multi mothers (27 %) during initial assessment.

Post test result shows that effect of warm compress perceived by primi mothers on pain was (35 %) and multi mothers was (35 %) found same. Mothers perception of pain relief was found almost equal in experimental group. Level of comfort of primi mothers were comparatively higher (27 %) than multi mothers (36 %).

FIG. 4.8

CORRELATION BETWEEN PRIMI AND MULTI MOTHERS ON PAIN

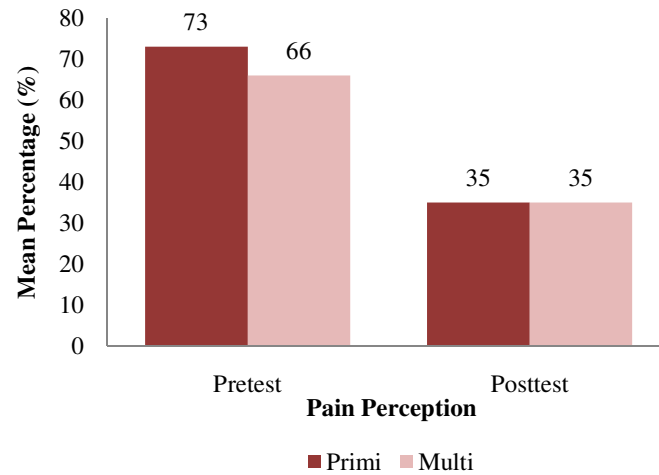
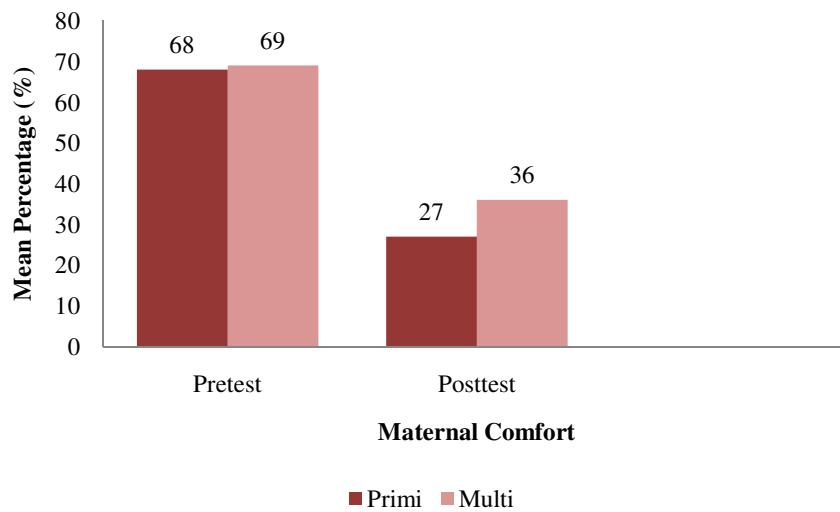


FIG. 4.9
CORRELATION BETWEEN PRIMI AND MULTI MOTHERS ON LEVEL OF MATERNAL COMFORT



RESULTS AND DISCUSSION

Main focus of the study was to test the effectiveness of warm compress during labour on pain and maternal comfort among parturient mothers.

5.1. FINDINGS RELATED TO DEMOGRAPHIC DATA

Age

In this study 11 % were between the age 18-23 years, 78 % mothers were between 24-29 years and 11 % mothers in age between 30-35 years in experimental group. In control group 34 % of mothers were in the age group 18-23 years, 44 % of mothers were between 24-29 years and 22 % of mothers were between 30-35 years of age category.

Religion

In this study majority of the parturient mother's in experimental group 67 % were Hindus, 33 % mothers were Muslims. In the control group 89 % of mothers were Hindus and 11 % were Muslims.

Education

The educational status of the parturient mothers in the experimental group revealed that 11 % mothers had primary education, 33 % of the mother had secondary education, 45 % had bachelor degree and 11 % of mother's educational status was Ph.D. In control group 45 % of mother's educational qualification was secondary, 33 % of mothers had bachelor degree, 11 % had master degree and 11 % completed their Ph.D. No mothers in study population of control group were with primary education category.

Occupation

Occupational status of the parturient mothers revealed that 89 % of mothers were housewives and 11 % of mothers were holding office job. In control group, 100 % of mothers were housewives. No mothers were working women.

5.2. FINDINGS RELATED TO EFFECT OF WARM COMPRESS DURING LABOURON PAIN

Warm compress during labour makes significant changes in reducing pain perception of the mother and it is scientifically on the basis of gate control theory (Behmannesh,2011). Vaginal birth without analgesia or anaesthesia contributes to optimal health outcomes for mothers and babies. However, vaginal and perineal stretching that occurs as the baby is born can be extremely painful, and genital tract trauma is common, especially in nulliparous women. When this trauma extends into the anal sphincter, the woman is at risk for long-term morbidity, including urinary incontinence and anal incontinence of gas or, less commonly, stool, and ongoing pain. Strategies to alleviate pain in the second stage and after birth to reduce the likelihood and severity of lacerations are needed(Dahlen, 2007).

The result of the effect of warm compress on pain during labour reveals that mean percentage of pain perceived by the mothers was 70 % in pre-test and it reduced to 35 % in the post-test. Post-test score indicates reduced pain intensity in the parturient after intervention. Hence, the hypothesis, warm compress reduces pain during labour was accepted.

5.3. FINDING RELATED TO EFFECT OF WARM COMPRESS ON MATERNAL COMFORT

The effect of warm compress on maternal comfort revealed, pre-test score of the mothers level of comfort was 69 % and it reduced to 32 % in the post test. Results revealed significant improvement in the level of comfort during labour with the use of warm compress throughout labour. Hence, the hypothesis warm compress improvematernal comfort during labour was accepted. Hot compresses soften the perineal skin allowing for more stretch in the tissue. Many women find that the warm compresses to be valuable for comfort during labour as well as to promote stretching of the perineum (Snuggs, 2008).

In the study pain and level of comfort of the primi and multi mothers during labour was compared. It revealed that pain perception of the primi mothers was higher (73 %) than multi mothers (66 %), Level of comfort of both primi mother (68 %) and multi mothers (69 %) during initial assessment were found almost same. Post test result revealed that effect of warm compress perceived by primi mothers on pain was 35 % and multi mothers was 35 %. The extent of pain relief among parturient mothers was found equal after intervention. Level of comfort of primi mothers were comparatively higher (27 %) than multi mothers (36 %).

Study found that there was no relationship for age with maternal pain perception and level of comfort during labour.

Most of the mothers in the experimental group expressed high degree of satisfaction in the care provided throughout the process of labour. Few mothers had reported their interest in using the same, in the subsequent deliveries. In control

group 11 % mothers had extension of episiotomy during delivery, remaining mothers in control group were did not had any such problem. In experimental group all mothers had episiotomy but were protected from extension of episiotomy incision.

DISCUSSION

Analysis of main findings of the study revealed that the intervention was effective. Hence the 't' values obtained for parturient mothers on effectiveness of warm compress on pain was 9.49, which was significant at 0.05 level. Effect of warm compress on maternal comfort during labour shown 9.89 as 't' value which was significant at 0.05 level. Many studies and literatures are supporting the positive effect of the warm compress on pain and maternal comfort during labour. Studies evidenced that warm compress may decrease the likelihood of anal sphincter tear and significantly reduce pain during labour and in postpartum Behmanesh (2008). In 1997 an Australian midwife conducted a study on effect of warm compress during labour among multi mothers. The study was small involving 71 women having their normal vaginal delivery. Study found that warm compress significantly reduced pain, 80 % of women reported gaining comfort from warm pack. Geissbähler et al., (2007) compared warm water birth with land birth this showed that patient in warm water birth group needed less obstetrical analgesia and warm water caused reduction of pain in 69 % of the patient. Similarly, Grodzka et al., (2007) showed that labour in warm water bath caused labour pain reduction in 76 % of all cases.

The present study researcher used the wet warm compress over low back during first stage and over perineum during second stage. Heat induces blood circulation and also interrupts the sensory pathway. The study result shows that the

heat therapy during first and second stage had significant effect on reducing pain perception of parturient mothers.

Present study researcher proved the wet warm compress that was beneficial to the parturient mothers to reduce the perception of pain, to improve their maternal comfort during labour and to increase level of satisfaction during labour. Dahlen et al., (2007) revealed that the application of perineal warm pack or compress had beneficial effect to improve maternal comfort and to reduce the pain perception experienced during child birth. Since mean percentage of mothers who received warm compress at first and second stage of labour pre-test score (70 %) was reduced to (35 %) during post-test. The study also examined maternal comfort during labour with application of warm compress, post test score (32 %) obtained was significantly less than the pre test score (69 %).

Simkin (1995) studied and stated that various non pharmacological methods like maternal position, application of heat and cold, breathing & relaxation, hypnosis, music, water birth and massage reduced pain and enhanced progress of labour. These measures also have significant effect in reducing fear & anxiety and improve maternal comfort throughout the process of labour.

SUMMARY AND CONCLUSION

Major focus of the study was to assess the effect of warm compress during labour on pain and maternal comfort among parturient mothers. Present day women are more likely to prefer the caesarean birth due to fear and anxiety on labour pain. Increasing incidence of caesarean section stresses the importance of the non-pharmacological interventions and its effectiveness. Literature reveals that increasing perception of pain and decreased maternal comfort had negative impact on mother's labour outcome and the quality of life. Warm compress was suggested scientifically during labour on the basis of gate control theory. Giving warm compress during labour will allow midwives to be with the mother to accompany the complete process of labour and mothers feel a sense of comfort, satisfaction and will provide continuous emotional support.

Conceptual frame work of the study was based up on Sr. Callista Roy's adaptation model (1980). An evaluative approach was used for the study. Review of literatures was about child birth experiences of the women, various non-pharmacological interventions to reduce the pain perception, improve maternal comfort, maternal satisfaction and quality of life and literature pertaining to warm compress during labour on pain and maternal comfort.

Study was conducted at Sri Ramakrishna Hospital, Coimbatore. A quasiexperimental pre testpost test control group design was adapted and convenient sampling was used to select parturient mothers. Procedure of the warm compress was explained to mothers and written consent was obtained for further proceedings of the study. Interview technique was used to collect both demographic and obstetric data

pertaining to the participants. Mother's pain perception and maternal comfort during labour was assessed using Numerical Pain Rating Scale and Visual Analogue Scale for Total Comfort respectively.

Result of the study revealed that warm compress during labour was effective in reducing pain perception and to improve maternal comfort. Many mothers reported to the researcher, the consulting physician and other doctors who attended the delivery that they had an increase in maternal comfort and high degree of satisfaction with the warm compress.

6.1. MAJOR FINDINGS OF THE STUDY

1. Frequency and percentage distribution of the demographic variables revealed that, among total respondents 11 % in experimental and 34 % in control group were in the age group between 18-23 years. In experimental group 78 % and in control group 44 % were between 24-29 years. 11 % in experimental and 22 % in control group were at the age between 30-35 years.
2. Frequency and percentage distribution of the Religion revealed that, in experimental group majority (67 %) of mothers were Hindus and only 33 % were Muslims. In control group 89 % of the mothers were Hindu and 11 % in Muslim.
3. Majority of the respondents were well educated in the present study. In experimental group 11 % of mothers had primary, 33 % had secondary, 45 % had bachelor degree and 11 % had PhD educational status. In control group 45 % of mothers had secondary, 33 % had bachelor degree, 11 % had master's degree and 11 % held Ph. D qualification.

4. Occupational status of the mothers revealed that most of the mothers were housewives 89 % in both experimental and 100 % in control group and 11 % of the mothers were holding office job in experimental group.
5. Warm compress was effective during labour to reduce the pain perception of the parturient mothers.
6. Mean percentage of the test score in post-test (35 %) was significantly lower than pre-test (70 %) score in the study group who had warm compress on perception of pain during labour.
7. Intervention improved the mother's level of comfort during labour.
8. Mean percentage of the test score in post-test (32 %) was significantly lower than the pre-test (69 %) value in the experimental group who used the intervention to improve the level of comfort during labour among parturient mothers.
9. Most of the women's expressed their high degree of satisfaction
10. Few mothers expressed their interest to have warm compress for their next delivery.
11. Study also shows that there is no correlation between age, with the study results i.e. individual pain perception and level of comfort during labour.
12. When comparing the pain perception of the primi (73 %) and multi (60 %) it reveals that primi mothers had relatively higher pain perception compared to multi mothers.
13. The level of comfort of the mothers during labour revealed that both primi (68 %) and multi (69 %) mothers equally rated their level of comfort. There was no significant difference between both the groups.

6.2. LIMITATIONS

1. Bias from individual knowledge on effect of warm compress.
2. Assessment of long term complications like urinary incontinence cannot be done due to the limited duration of the study.
3. Application of warm compress is not possible in mothers with medical complications.

6.3. RECOMMENDATIONS

1. The study can be replicated with a larger sample size over a long period of time for wider generalization of findings.
2. A comparative study can be done on various non-pharmacological interventions during labour.
3. A structured teaching programme can be conducted to the staff nurses working in obstetric department to practice it in their routine care.
4. Similar study can be conducted as a true experimental study with randomization.
5. Follow up evaluation of outcome can be studied i.e.; day one and two, after one month and six month for long term effect such as quality of life, urinary incontinence.

6.4. NURSING IMPLICATIONS

The result of the study has implication in nursing education, nursing practice, nursing administration and nursing research.

6.4.1. Nursing Education

To deliver the nursing care effectively according to the needs of the society, nursing education must focus on alternative and complimentary therapies along with

routine care procedure. Make use of available literature and studies related to non-pharmacological measures for pain relief during labour and educate the students about various complementary and alternative therapies for pain management in labour. Since the use of the warm compress is found to be positively significant on maternal pain and comfort, it can be introduced in the curriculum. Findings of the study encourage the students for effective utilisation of research based practice.

6.4.2. Nursing Practice

The midwives have a vital role in providing safe and effective nursing care to enhance reduction of labour pain perception. This can be done by motivating the nurse midwives to have an in-depth knowledge on physiological changes during labour, understand the importance of reduction of pain perception during labour and develop skill in providing efficient nursing care for effective pain management during labour.

Compared to pharmacological intervention non pharmacological interventions are more accessible to any social class, since warm compress is effective and affordable expenses nurses knowledgeable on the procedure of warm compress to have a quality outcome.

6.4.3. Nursing Administration

As technology advances, the cost of health care of public should be considered. Nurse administrators should have an attitude to make the care cost effective and high quality with available resources. Alternative and complimentary therapies are the best choice found effective to meet the needs of the changing society in health care. So administrators should take effort to update the knowledge of

the nurse and encourage evidence based practice.To meet these objectives it is necessary to;

- a) Collaborate with governing bodies to formulate standard policies and protocols to emphasis nursing care during labour.
- b) Arrange and conduct workshops, conferences, and seminars on non-pharmacological methods to reduce labour pain perception.
- c) Provide opportunities for nurse midwives to attend training programmes on complementary and alternative therapies for pain management in labour.

6.4.4. Nursing Research

The present study has tested the effect of warm compress during labour on pain and maternal comfort. Similar studies can be proposed in the future to test the effectiveness of warm compress on the basis of long term and short term effect.Research studies like warm compress promote effective utilisation of research findings on labour pain management.

6.5. CONCLUSION

The application of warm compress during labour is widely advocated by midwives to reduce the pain perception and to improve maternal comfort. The origin of this practice dates back in history and is lost in history. But it is obvious from the historical literature that application of warm compress during labour is indeed a very ancient practice. This is a small sample study which examined the effect of warm compress during labour on pain perception and maternal comfort. The study evidenced that warm compress reduced maternal pain perception, improved level of comfort, and many mothers expressed greater satisfaction with warm compress. There

is some evidence in literatures that warm compress reduces severe perineal trauma and urinary incontinence and this warrants further investigation.

APPENDIX – IV CONSENT FORM

பங்கு பெறுவோருக்கான படிவம்

பிரசவத்தின் போது பிறப்புறுப்புகளில் வெப்ப ஒத்தடம் கொடுப்பதன் மூலம் ஏற்படும் விளைவு பற்றிய ஆய்வு.

நான்.....(பெயர்)

.....(முசுவி)

கீழ் வரும் தகவல்களை பங்கு பெறுவோர் படித்து புரிந்து கொள்வதற்கு,
பெயருடன்.....

இந்த ஆய்வில் வரும் செயல்முறைகள் அனைத்தும் அறிவேன். பிரசவத்தின் போது வெப்ப ஒத்தடம் கொடுக்கவோ அல்லது கொடுக்கப்படமலோ இருக்கலாம் என்பதை அறிவேன்.

இந்த ஆய்வில் நானாக முன்வந்து பங்கேற்கிறேன். மேலும் இதை எந்த நேரத்திலும் கைவிடலாம் என்பதை அறிந்துகொண்டேன். இந்த ஆய்வு நம்பிக்கைக்குரியது. தகவல் ஏதும் வெளிப்படாது என்பதை அறிந்துகொண்டேன்.

இதன் மூலம் இந்த ஆய்வில் பங்கேற்க ஒத்துழைக்கிறேன்.

பெயர் :
கையொப்பம் :
தேதி :
சாட்சியின் பெயர் :
சாட்சியின் கையொப்பம் :

APPENDIX – I
PERMISSION LETTER FOR CONDUCTING STUDY

From:
Winy Sara Varughese,
M.sc. Nursing 1 year,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Science,
Coimbatore – 44

To:
The Head of the Department
Dept of Obstetrics & Gynecology
Sri Ramakrishna Hospital,
Coimbatore – 44

Through:
The Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Science,
Coimbatore – 44

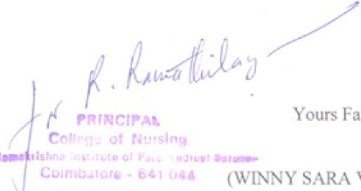

Sub: Letter requesting permission for conducting the research study.

Respected Sir,

As I have to do a research study, as a part of my curriculum requirement under Dr. M.G.R. Medical University. The title of the study is "EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AND MATERNAL COMFORT AMONG PARTURIENTS MOTHERS AT SRI RAMAKRISHNA HOSPITAL, COIMBATORE"

I kindly request you to grant me permission to do the study in your hospital. I assure that I will abide by the rules of the institution and information collected from the study participants will not be disclosed. Kindly do the needful.

Thanking You,


Yours Faithfully

PRINCIPAL
College of Nursing
Sri Ramakrishna Institute of Paramedical Science
Coimbatore - 641 044 (WINNY SARA VARUGHESE)

Place : Coimbatore

Date :

Permitted
Ram

FORMAT FOR CONTENT VALIDITY

Name of the expert : DR. ESTHER JOHN, M.SC.(N),PH.D,
PRINCIPAL,
Address: GANGA COLLEGE OF NURSING,
COIMBATORE

Total content for the tool: Adequate / Inadequate

Kindly validate each tool and tick wherever applicable

S.No	Section of tool	Strongly agree	Agree	Needs modification	Remark
1.	SECTION-A	✓			
2.	SECTION -B	✓			
3.	SECTION-C	✓			
4.	SECTION-D	✓			
5.	SECTION-E	✓			
6.	SECTION-F	✓			

Date:

Signature of the expert


PRINCIPAL
GANGA COLLEGE OF NURSING
COIMBATORE-641 022

Requisition letter

From

Ms. Winny Sara Varughese
Msc Nursing I year student,
College of Nursing, SRIPMS.
Coimbatore- 641044

Through

Prof.Mrs.Seethalakshmi,
The Principal,
College of Nursing, SRIPMS.
Coimbatore- 641044

To

**DR. ESTHER JOHN, M.SC.(N), PH.D,
PRINCIPAL,
GANGA COLLEGE OF NURSING,
COIMBATORE**

Respected madam,

Sub: Seeking approval of the thesis tool for content validity- reg

Myself, Ms. Winny Sara Varughese, is pursuing Msc (Nursing) I yr at College Of Nursing, SRIPMS. As a partial fulfillment of the course, under The Tamil Nadu Dr.MGR Medical University, I am conducting a project on "EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AND MATERNAL COMFORT AMONG PARTURIENT MOTHERS AT SRI RAMAKRISHNA HOSPITAL, COIMBATORE"

Kindly review the tool attached for the content validity. Your esteemed suggestions and guidance would be greatly helpful in my pursuit as beginner in research. I will be grateful to receive your comments to enhance the quality of the study.

Thanking you,

Date
Place

K. Ramathilega
for
THE PRINCIPAL
College of Nursing
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore- 641004.

Yours Faithfully


(Ms. Winny Sara Varughese)

FORMAT FOR CONTENT VALIDITY

Name of the expert : PROFESSOR. SHEEBA, M.SC.(N),OBG,
HOD. DEPT. OF OBG NURSING,
Address: KG COLLEGE OF NURSING,
COIMBATORE


Total content for the tool: Adequate /Inadequate

Kindly validate each tool and tick wherever applicable

S.No	Section of tool	Strongly agree	Agree	Needs modification	Remark
1.	SECTION-A		✓		
2.	SECTION -B		✓		
3.	SECTION-C		✓		
4.	SECTION-D		✓		
5.	SECTION-E		✓		
6.	SECTION-F		✓		

Date: 16/6/11




Signature of the expert

APPENDIX – II
Letter Requesting to Validate the Research Tool and Content

Requisition letter

From

Ms. Winny Sara Varughese
Msc Nursing I year student,
College of Nursing, SRIPMS.
Coimbatore- 641044

Through

The Principal,
College of Nursing, SRIPMS.
Coimbatore- 641044

To

**PROFESSOR. SHEEBA, M.SC.(N),OBG,
HOD, DEPT. OF OBG NURSING,
KG COLLEGE OF NURSING,
COIMBATORE**

Respected madam,

Sub: Seeking approval of the thesis tool for content validity- reg


Myself, Ms. Winny Sara Varughese, is pursuing Msc (Nursing) I yr at College Of Nursing, SRIPMS. As a partial fulfillment of the course, under The Tamil Nadu Dr.MGR Medical University, I am conducting a project on "EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AND MATERNAL COMFORT AMONG PARTURIENT MOTHERS AT SRI RAMAKRISHNA HOSPITAL, COIMBATORE"

Kindly review the tool attached for the content validity. Your esteemed suggestions and guidance would be greatly helpful in my pursuit as beginner in research. I will be grateful to receive your comments to enhance the quality of the study.

Thanking you,

Date
Place

Yours Faithfully


College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore - 641 044.

(Ms. Winny Sara Varughese)

FORMAT FOR CONTENT VALIDITY

Name of the expert : PROFESSOR. RENUKA DEVI, M.SC.(N),OBG,
HOD. DEPT. OF OBG NURSING,
Address: KMCH COLLEGE OF NURSING,
COIMBATORE

Total content for the tool: Adequate /Inadequate

Kindly validate each tool and tick wherever applicable

S.No	Section of tool	Strongly agree	Agree	Needs modification	Remark
1.	SECTION-A	✓			
2.	SECTION -B	✓			
3.	SECTION-C	✓			
4.	SECTION-D	✓			
5.	SECTION-E		✓		
6.	SECTION-F		✓		

Date: 14.6.2011

Renuka
Signature of the expert
(RENUKA.S)

Requisition letter

From

Ms. Winny Sara Varughese
Msc Nursing I year student,
College of Nursing, SRIPMS.
Coimbatore- 641044

Through

The Principal,
College of Nursing, SRIPMS.
Coimbatore- 641044

To

**PROFESSOR. RENUKA DEVI, M.SC.(N),OBG,
HOD, DEPT. OF OBG NURSING,
KMCH COLLEGE OF NURSING,
COIMBATORE**

Respected madam,

Sub: Seeking approval of the thesis tool for content validity- reg

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Thanking you,

Date
Place

K. Ramakrishna
for **PRINCIPAL**
College of Nursing
of Ramakrishna Institute of Para - medical Science
Coimbatore - 641 044

Yours Faithfully

(Ms. Winny Sara Varughese)


FORMAT FOR CONTENT VALIDITY

Name of the expert : DR.R.LALITHA,
MBBS, D.G.O.,
Address: GYNAECOLOGIST,
SRI RAMAKRISHNA HOSPITAL,
COIMBATORE

Total content for the tool: Adequate /Inadequate

Kindly validate each tool and tick wherever applicable

S.No	Section of tool	Strongly agree	Agree	Needs modification	Remark
1.	SECTION-A	✓			
2.	SECTION -B	✓			
3.	SECTION-C	✓			
4.	SECTION-D	✓			
5.	SECTION-E	✓			
6.	SECTION-F	✓			


Dr. R.LALITHA, MBBS, D.G.O.,
Obstetrician & Gynaecologist
Sri Ramakrishna Hospital,
COIMBATORE.

Date:

Signature of the expert

Requisition letter

From

Ms. Winny Sara Varughese
Msc Nursing I year student,
College of Nursing, SRIPMS.
Coimbatore- 641044

Through

The Principal,
College of Nursing, SRIPMS.
Coimbatore- 641044

To

**DR.R.LALITHA,
MBBS, D.G.O.,
GYNAECOLOGIST,
SRI RAMAKRISHNA HOSPITAL,
COIMBATORE**

Respected madam,

Sub: Seeking approval of the thesis tool for content validity- reg

Myself, Ms. Winny Sara Varughese, is pursuing Msc (Nursing) I yr at College Of Nursing, SRIPMS. As a partial fulfillment of the course, under The Tamil Nadu Dr.MGR Medical University, I am conducting a project on "EFFECT OF WARM COMPRESS DURING LABOUR ON PAIN AND MATERNAL COMFORT AMONG PARTURIENT MOTHERS AT SRI RAMAKRISHNA HOSPITAL, COIMBATORE"

Kindly review the tool attached for the content validity. Your esteemed suggestions and guidance would be greatly helpful in my pursuit as beginner in research. I will be grateful to receive your comments to enhance the quality of the study.


Thanking you,


Date
Place

Yours Faithfully



(Ms. Winny Sara Varughese)


**Dr. R.LALITHA, MBBS DGO,
Obstetrician & Gynaecologist
Sri Ramakrishna Hospital,
COIMBATORE.**


**PRINCIPAL
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044,**

From
Winy Sara varughese
M.Sc Nursing 1 year,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

To
The Dean
Sri Ramakrishna hospital
Coimbatore- 44

Through
The Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

Sub: Letter requesting permission for conducting the research study.

Respected Sir,

I, Ms. Winy Varughese is doing M.Sc. (N) I Year in college of Nursing, Sri Ramakrishna Institute of paramedical Sciences. As a part of my curriculum requirement under the Tamil Nadu M. G. R. Medical University I am doing a study on "Effect of warm compress on pain and maternal comfort during labour among parturient mothers at Sri Ramakrishna Hospital, Coimbatore", I am Planning to conduct the study at Sri Ramakrishna Hospital, Coimbatore.

I kindly request you to grant me permission for doing the study in the selected setting. I assure that I will abide the rules of the institution, and information collected from the study participants will not be disclosed.

Thanking you,

Yours faithfully,

Coimbatore

Date:

[Signature]
NEETHU VARGHESE

*Permitted.
G.S. Meenon
9.8.20*