EFFECTIVENESS OF SODIUM CHLORIDE APPLICATION ON EPISIOTOMY WOUND HEALING AMONG POSTNATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL, MADURAI.

M.Sc (NURSING) DEGREE EXAMINATION

BRANCH –III OBSTETRICS AND GYNAECOLOGICAL NURSING

COLLEGE OF NURSING

MADURAI MEDICAL COLLEGE, MADURAI-625020.

A dissertation submitted to

THE TAMIL NADU DR.M.G.R MEDICAL UNIVERSITY

CHENNAI-600032.

In partial fulfilment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

OCTOBER 2018

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ACKNOWLEDGEMENT

I consider it as a privilege to express my gratitude and respect to all those who guided and inspired me in the completion of this dissertation. The satisfaction and pleasure that accompany the successful completion of any task would be incomplete without mentioning the people who made it possible. Whose constant guidance and encouragement rewards any effort with success.

I praise the **LORD JESUS** who has been my source of strength in every step of my life and for his enriched blessings, abundant grace and mercy, who flourished the deserted part with rivers of blessings and enlightened my darkness by his marvellous light.

I would like to express my sincere gratitude to **Dr.D.Maruthu pandian, M.S., F.I.C.S., F.A.I.S.,** Dean, Madurai Medical College, Madurai who has been challenging personality and motivating factor and for granting me permission to conduct the study in this esteemed institution.

I extend my heartfelt and faithful thanks to **Dr.S.Rajamani, M.Sc (N).,M.B.A (HM)., M.Sc (Psy)., Ph.D.,** Principal Incharge, HOD, Department of Psychiatric (Mental Health) Nursing, College of Nursing, Madurai Medical College, Madurai, for the guidance, valuable suggestions and constant affectionate encouragement in each and every steps. I took forward and her hard work, efforts, interest to mould this study in a successful way and has given her inspiration and laid strong foundation in research. It is very essential to mention that her wisdom and helping tendency has made my research a lively and everlasting one.

I express my heartfelt thanks to **Prof. Mrs. S. Poonguzhali, M.Sc (N)., M.A (Psy)., M.B.A (HM)., Ph.D.,** Former Principal , College of Nursing, Madurai Medical

College, Madurai. I have been amazingly fortunate to have a teacher who guided me and supported me in all possible manners to complete this study.

I extent my special thanks to **Prof. Dr. V. N. Nagarajan, MD., MNAMS., DM (Neuro)., DSC (Neuroscience)., DSC (Hons).,** Professor Emeritus in Neuroscience, Tamil Nadu Govt. Dr. M. G. R Medical University for approved this study **.**

I also extend my sincere thanks to **Prof. Dr. C. Shanthi, MD., DGO.,** HOD., Department of Obstetrics and Gynaecology**,** Government Rajaji Hospital and Madurai Medical College, Madurai for her valuable correction, keen interest, generous support guidance and enlightening ideas and also for validating the tool for my study.

I also express my faithful thanks to my clinical speciality guide **Mrs. S. Auyisha Sithik, M.Sc (N)., M.B.A (HR).,** Faculty, Department of Obstetrics and Gynaecological Nursing, College of Nursing, Madurai Medical College for her elegant direction and corrections made on my study which helped me a lot to come up to this stage. I thank her for her full support which kindled my spirit and enthusiasm to go ahead and accomplish this study successfully.

I wish to express my sincere heartfelt thanks to **Mrs. S. Lillipushpam, M.Sc (N).,** Lecturer, Department of Obstetrics and Gynaecological Nursing, College of Nursing, Madurai Medical College, Madurai, for her guidance and continuous support throughout the study.

I extend my faithful thanks to **Miss. P. Malliga, M.Sc (N)., M.A (Soc).,** Faculty, Department of Obstetrics and Gynaecological Nursing, College of Nursing, Madurai Medical College Madurai for her words of appreciation, unwavering encouragement, helping, affectionate, enduring support, timely correction and guidance that she has bestowed on me.

I express my thanks to **Mr. B. Manikandan**, **B.Sc., B.L.I.Sc.,** Librarian**,** College of Nursing, Madurai Medical College, Madurai, for his help in utilizing the library facility**.**

I wish to express my sincere thanks to **Dr. A. Venkatesan**, **M.Sc., M.Phil., PGDCA., Ph.D.,** Former Deputy Director of Medical Education (Statistics)**,** Chennai for his expert advice and necessary guidance for statistical analysis.

My special and affectionate thanks to my beloved father **Mr.N.Sathiya Dhas**, my heartfelt thanks to my dear lovable Mother **Mrs.A.Aseena**, my sweet lovable brother **Mr.S.Jebastin, B.E (EEE)., MA (His).,** for their prayer, support and encouragement in all parts and aspects of my life and studies.

I am thankful to **Laser point** for printing and binding my entire dissertation book in time.

My special gratitude to all my **Study Subjects** whose kind cooperation in this study.

I dedicate this dissertation to my heavenly father **LORD** who is my shepherd and who leads me, protects me, guide me and keep me in every part of my life.

ABSTRACT

Title: Effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers at Government Rajaji Hospital, Madurai. **Objectives:**To assess the episiotomy wound healing among postnatal mothers. To evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers. To associate the episiotomy wound healing among postnatal mothers with their socio demographic and obstetrical variables. **Hypotheses:** There is a significant difference between pre test and post test episiotomy wound healing among postnatal mothers. There is a significant association between episiotomy wound healing among postnatal mothers with their socio demographic and obstetrical variables. **Methodology:** True experimental pre test post test design was used. 60 subjects were selected by using simple random sampling. 30 in interventional and 30 in control group. Intervention group sodium chloride application was given twice a day for 3 consecutive days. **Results:** The findings revealed that improvement in wound healing after intervention, confirmed by paired "t" test ($t = 11.74$ and $p = < 0.001\%$) level. **Conclusion**: The study concluded that sodium chloride was effective in wound healing among post natal mothers.

Key words: Postnatal Mothers, Episiotomy wound healing, Sodium chloride application

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CHAPTER –I

INTRODUCTION

"Giving birth should be power greatest achievement not power greatest fear"

- Jane weideman

"Birth is not only about making mothers strong, competent, capable mothers who trust themselves and know their inner strength"

–Barbara katz Rothma

Motherhood is a beautiful process whereby the mother safely delivers a child .It is the magic of creation. Care must be given to ensure safe childbirth. Safe motherhood initiative announced in 1987 had set targets to reduce maternal mortality rate by 50% in one decade. It is the most wondrous time in people's lives, when they bring a new family member in to the home to settle their family's hearts and household. The moment of birth is both joyous and beautiful. Birth is a unique dynamic process, fetal and maternal physiologies interact symbiotically. The physiological transition from pregnancy to motherhood heralds an enormous change in each woman physically and psychologically. (Bennett R 1993).

"The birth of the baby is a momentous occasionally detail of the experiences surrounding the whole events is etched in the memory forever."Childbirth, as such, is a joyous event, both for the women and family and for the care givers. Pregnancy is typically divided into three trimesters. The first trimester is from week one through twelve and includes conception. Conception is followed by the fertilized egg travelling down the fallopian tube and attaching to the inside of the uterus, where it begins to form the fetus and placenta. The first trimester carries the highest risk of miscarriage (natural death of embryo or fetus). The second trimester is from week 13-28. Around the middle of the second trimester, movement of the fetus may be felt. At 28 weeks, more than

90% of babies can survive outside of the uterus if provided high-quality medical care. The third trimester is from 29 weeks 40 weeks.

Labour. is the process of delivering a baby and the placenta, membranes, and umbilical cord from the uterus to the vagina to the outside world. During the first stage of labour (which is called dilatation), the cervix dilates fully to a diameter of about 10 cm (2 inches). Also known as parturition and childbirth. (Myles 2010)

Episiotomy is one of the most common procedures done during child birth to avoid further complication. It is performed during the second stage of labour. The first performance of episiotomy was done in 1742, when perineal incision were used to facilitate deliveries. Episiotomy shortens the pushing phase and thus reduces the chance of oxygen deprivation in the baby and also it protects the foetal skull and brain from damage as it is "thrust against" the pelvic floor. Episiotomy can be midline or at an angle from the posterior end of the vulva, is performed under local anaesthesia and it is sutured after delivery.

The type of episiotomy includes medio-lateral, median, lateral and J shaped episiotomy. Among this medio-lateral episiotomy is done commonly. (Faruel Fossie 2007).

Episiotomy is a common surgical procedure experienced by women in Asia. Based on National hospital discharge data for 2013, just over 35% of women who gave birth vaginally had an episiotomy performed; the figure was approximately 33% in 2000. National rates reflect a steady decline over the period of two decades, with 2003 data suggesting that approximately 30 percent of vaginal births include episiotomy.

The main reasons for performing an episiotomy are fetal distress (27%), impending tears (25%) and delay of the second stage of labour (21%). The distribution

of having an episiotomy increased with the duration of the second stage of labour, irrespective of the time of delivery (Thomas J broody 2014).

According to WHO the birth rate in India in 2017 was 21.76 per thousand birth and incidence of episiotomy is high. It has been reported that 23 percent of women have health problems in first month after delivery related to episiotomy as perineal tear, urinary incontinence, uterine prolapsed. In 2014, 29 percent of birth were delivered by caesarean delivery and 60 percent delivered per vaginal.

Postpartum assessment of the mother focuses on the maternal response to the labour and delivery, the biophysical changes, and the physiological adjustment to parenthood Infection of episiotomy wound can lead the peuperial sepsis. Peurperial sepsis is one of the major causes of maternal morbidity and mortality. 11.5 percent of the postnatal mothers are dying with peuperal sepsis.

Care of episiotomy would begin immediately after delivery and should include a combination of local wound care and pain management. The care of episiotomy is different from hospital to hospital. Many interventions are in practice to relieve pain and thus enhance the healing of episiotomy wound, which include warm soaks, warm sitz bath, infrared radiation and cooling pads, application of antiseptic solutions. Sodium chloride solution is widely used in the hospitals for the healing of episiotomy wound. It helps to improve epithelialization of skin prevent infection and promote wound healing. Simple principle of episiotomy wound healing is good blood flow, oxygen, nutrients, and absence of infection.

Today when the cost of medical treatment and care is soaring. The core objective of medical treatment is to provide cost effective care to its client. Cost effective interventions can be provided if nurse and midwives realize the relevance of

their care in the episiotomy wound healing. The best way of provide care is to empower nurses and health care providers to bring change in their daily practices.

Sodium chloride solution is favourable as it is an isotonic solution and does not interfere with the normal healing process. It is easily available, efficient, and cost effective. Sodium chloride solution is most commonly used solution due to safety (lowest toxicity) and physiologic factors. The application of normal saline is useful in first 24 hours post-partum which reduces inflammatory reaction and oedema. It will not cause any burning pain and does not cause damage to the new tissues and thus promote the healing process. In Tamil Nadu, it is estimated that 1 286.796 births occur annually and that nearly one-half (52.5%) of these births are vaginal births. Midwives and obstetricians routinely perform episiotomy on the majority of these women because they subscribe to the beneficial effects of episiotomy. However, in a number of systematic reviews, it has been reported that episiotomy is not as beneficial as expected and should not be routinely performed. These studies revealed that episiotomy fail to decrease the risk of perineal trauma, accelerate the healing of perineum, prevent pelvic floor relaxation, or improve the outcomes regarding the newborn. Moreover, it has been reported that episiotomy is associated with increased perineal pain, sexual problems,

Mediolateral episiotomy is the most frequently used type of episiotomy in Europe and India . It is defined as an incision beginning within 3 mm of the midline in the posterior fourchette, and directed laterally at an angle of at least 60° from the midline toward the ischial tuberosity and downward away from the rectum.

In India, midwives are involved in the long-term care of women. Midwives follow women 15 to 45 years of age in terms of ante partum, intra partum, and early and late postpartum care. In the effective and sensitive care of women and their families, decreasing the rate of trauma to the genital tract is of great importance and has

priority both for the woman and for the healthcare workers. A multidisciplinary approach, including the midwives, obstetricians, and other relevant healthcare workers is essential in the management of perineal traumas. In accordance with national and institutional strategies, the midwives have substantial responsibilities in the restricted use of episiotomy, in addition to intra partum care and follow-up, as well as supporting and assisting in the deliveries.

Despite current recommendations against routine use of episiotomy, its incidence is still high in Tamil Nadu. The total number of births in the state, meanwhile, has dropped by nearly 14%, from 10,81,965 in 2010 to 9,21,657 in 2016, while the number of institutional deliveries went up by 0.16%, from 99.81% to 99.97%. Therefore prospective studies involving the demographic, labour, and postpartum conditions related with episiotomy as well as the traditional approach of healthcare workers during intra partum and postpartum care are needed. Thus, more effective actions could be objectively promoted in searching for the reduction of its frequency, providing a clinical practice based on scientific evidence.

The perineum is assessed for the type and amount of vaginal discharge, unusual swelling, discoloration, healing of the tissues and discomfort. If an episiotomy was performed, the state of healing is assessed by observing for redness, Edema, Ecchymosis, Discharge and Approximation of the wound. Foul odour accompanied by drainage indicates infection, further examination of the incision and area of warmth and tenderness should be performed. The normal episiotomy site should not have redness, discharge or edema. The majority of healing takes place within the first 2 weeks, but it may take 4 to 6 months for the episiotomy to heal completely.

1.1 Need for the study

Pregnancy and child birth are special events in women's lives. Mothers however suffer much distress after child birth due to a painful perineum following episiotomy. The American College of Obstetricians and Gynaecologists estimates that as many as 90% of women giving birth to their first child in a hospital will have an episiotomy. Episiotomy is not a pleasant experience as it is painful during and after the procedure. A current medical literature documented that 60% of women with episiotomies reported severe postpartum pain, 25% experienced infection at the site and 20% had problems with intercourse for up to 3 months after birthing. Hence it is evident that special care must be taken to prevent infection, hasten healing and reduce scar.

According to WHO, the number of normal delivery rate being very high 30% per 1000 births. The risk of perineal infections ranges from 2.8 % to higher than the 18%, The risk of infection can be high as 20 %. The world health organization has taken a clear stand against routine practice of episiotomy. The episiotomy infections are preventable and can be reduced by practicing clear delivery and post-natal care. Midwives have an important role in the care of episiotomy wound after child birth.

Postnatal infections are the leading cause of hospital acquired infection and a leading cause of maternal morbidity and mortality. They expose woman to increased risk of delayed mother- infant interaction prolonged hospital stay or re-admittance to the hospital, lactation difficulties, increased expense and possibly permanent injury or death. Infection was the fourth leading cause of maternal death in United states from 1999-2006.

In India, the incidence of episiotomy is high. A population based study was conducted with the objective to estimate episiotomy rate associated with the place of delivery and category of healthcare provider. Results shown that the woman whose

delivery was conducted by doctors the episiotomy rate was 77.4% and conducted by nurses it was 53.1%. Episiotomy rate was very high (91.8%). when delivery was conducted in private hospitals and the rates were lower in secondary and primary level institutions. Study concluded that the episiotomy rate depends on the institutions where deliveries take place and it is very high when doctors conducted the delivery. Probably similar high rates are found in other parts of India.

In 2017, female population for India was 645 million persons. Female population of India increased from 255 million persons in 1968 to 645 million persons in 2017 growing at an average annual rate of 1.91 %. In Tamil Nadu female population constitutes 43% of total population. According to the senses total percentage of normal deliveries with episiotomy in Tamil Nadu is 58.6%. The crude birth rate is 22.5 per thousand live birth rate while maternal mortality rate is 2 per thousand live births in 2007. The very high level of maternal mortality are generally associated with perineal sepsis, harmful practices, infection related to perineal wound, and low female literacy.

Sali Anita comparative study was conducted to assess the effects of Sodium chloride solution with other solution for wound cleansing. The aim of the study to promote the healing of episiotomy wound. The study had 11 trials which included 310 postnatal mothers. The findings suggest that 62.9% of mothers treated with sodium chloride solution had good healing. The mothers (38%) treated with other solutions had got skin irritation. The result shown that sodium chloride solution is effective in reducing the infection rate than any other solutions. The study concluded that sodium chloride solution can be used as a healing agent which will not interfere the normal healing process. (Sali Anita)

Postnatal women are prone for puerperial infection, which can be prevented by proper hygienic measures, especially perineal care. Any trauma such as episiotomy,

tear and laceration will increase the tendency for the development of infection in the postnatal period. Proper care of episiotomy incision should be encouraged to ensure that the trauma is healing satisfactorily. Pain and discomfort from episiotomies can be reduced by providing therapeutic cleansing soak, such as warm water sitz bath to promote blood flow to the episiotomy for rapid healing.

Episiotomy is one of the most widely performed surgical procedure. The rate of episiotomy ranges from 50-90% in developing countries. In various countries routine episiotomy has been accepted medical practice for many years. As of 2016, the average birth rate for the whole world is 20.3 per 1000 total population, which for a world population of 6.6 billion comes to 134 million babies per year .

A study was conducted to determine the frequency of perineal pain in the 6 weeks after vaginal delivery and to assess the association between perineal trauma and perineal pain Results showed that perineal trauma was more common among primi parous women, those with operative vaginal deliveries and epidural analgesia during the second stage of labour. Perineal pain was more frequent and severe for women with increased perineal trauma.

In 2000, one study was calculated the percentage of episiotomies performed in the United States out of all vaginal deliveries to be 19.4%. This was a dramatic reduction from the 1983 rate of 69.4% Episiotomy rates were higher among white women (32.1%) than African American women (11.2%) . Similar differences have been reported in other obstetric procedures (eg. Caesarean section and epidural use).

A study was conducted on role of the midwife in perineal wound care following child birth. A wide variety of practices are carried out in this area. However, midwives must realize the relevance of their care and potential impact, both positive and negative

of advocated treatments in wound healing. The maintenance of effective pain relief must be balanced with the need to promote wound healing.

In many hospitals, episiotomy becomes a normal procedure on every women delivering her first child to avoid perineal laceration and damage to pelvic floor and to reduce birth trauma.

In Government .Rajaji. Hospital, Madurai district, in the year 2017 there was 1800 normal vaginal deliveries were conducted, out of this, 100% incidence of episiotomy among primi gravida women and 50% incidence of episiotomy among multi gravida women during the second stage of labour. Sodium chloride solution improves epithelialisation and soothes the sore tissues, keeps the area clean and prevents infection and helps with circulation.

In the present situation, cost of medical treatment is a major issue influencing the patient and his treatment. Now a days the medical insurance companies have started playing a major role in decision making regarding the treatment. Use of sodium chloride solution would be cost effective as the healing occurs without local antibiotics or disinfectants. It does not alter the normal bacterial flora of the skin and has no effect on blood flow in capillaries and on collagen. And it neither donates fluid nor draws it away from the wound bed. It helps to remove things that can irritate the underlying tissue as well as help to wash out bacteria. It relieves stiffness and muscle cramps and reduces redness and oedema and hastens the healing of episiotomy.

Based on the review of literature and the personal experience of the investigator during her clinical posting found that in many hospitals episiotomy care involves several practices such as perineal wash, sitz bath, application of infra red lamp, antibiotics to relieve pain and discomfort and to promote faster wound healing. Hence the investigator is interested to conduct the study on effectiveness of sodium chloride

solution on episiotomy wound healing. In this study sodium chloride application refers to the procedure of clean the episiotomy wound from forchette to anus by using sterile cotton with an isotonic solution which helps in epithelisation of skin and enhance wound healing process on episiotomy wound and it is applied first postnatal day two times a day for three days daily .

1.2 Statement of the Problem

"A study to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among post natal mothers at Government Rajaji Hospital Madurai."

1.3 Objectives of the study

1. To assess the episiotomy wound healing among postnatal mothers in interventional and control group at Government Rajaji Hospital Madurai.
2. To evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.
3. To associate the episiotomy wound healing among postnatal mothers both interventional group and control group with their socio demographic variable and obstetrical variables.

1.4 Hypotheses

H_1: There is a significant difference between pre test and post test episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.

H_2: There is a significant difference between post test episiotomy wound healing among postnatal mothers both in interventional and control group at Government Rajaji Hospital Madurai.

H_3: There is a significant association between the episiotomy wound healing among postnatal mothers both interventional and control group with their socio demographic variable and obstetrical variables.

1.5 Operational definitions

Effectiveness

In this study effectiveness refers to the improvement in episiotomy wound healing by the 0.9% sodium chloride application on episiotomy wound; this will be elicited by using Redness , Edema, Ecchymosis, Discharge, Approximaton of wound status (REEDA) scale.

Sodium chloride Application

In this study sodium chloride application refers to the procedure of cleaning the episiotomy wound from forchette to anus by using sterile cotton with an isotonic solution which helps in epithelisation of skin and enhance wound healing process on episiotomy wound and it is applied from first postnatal day two times a day for three consecutive days daily .

Episiotomy wound healing

In this study episiotomy wound healing refers to changes in the episiotomy wound after application of sodium chloride solution and it is measured by Redness, Edema, Ecchymosis, Discharge and Approximation of wound edges (REEDA) scale.

Postnatal mother

In this study postnatal mothers refers to 24 hours after delivery of the women who have normal vaginal delivery with episiotomy.

1.6 Assumptions

- Postnatal mothers may have varying or different level of episiotomy wound healing.
- Sodium chloride application is cost effective and it is easily followed by the postnatal mother in future.

1.7 Delimitations

The study is limited to

- Postnatal mothers admitted in Government Rajaji Hospital,Madurai,
- The data collection period is limited 4 to 6 weeks only.

1.8 Projected outcome

Sodium chloride solution will reducing episiotomy wound infection and enhance the episiotomy wound healing among postnatal mothers.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

Review of literature is a key step in research process. It refers to extensive exhaustive and systematic examinations of publications relevant to the research project. The researcher analysis existing knowledge before dealing into a new area of study, when interpreting the results of the study, and when making judgments about applications at a new knowledge in nursing practice.

This chapter deals with two parts,

Part-I: Review of literature related to study

Part II: Conceptual framework

Part-I

The related literature is organized and presented under the following headings.

2.1: Literature related to incidence of episiotomy

2.2: Literature related to various methods used for episiotomy wound healing

2.3: Literature related to effect of sodium chloride application on episiotomy wound healing.

2.1: Literature related to episiotomy

Eoizukadim.et.al., (2014) conducted a retrospective cross sectional study to determine the prevalence, predictors, and outcomes of episiotomy among primi gravida women in Enugu, Nigeria. Mann Whitney U-test (continuous data) and Chi-square test (categorical data) were used for data analysis. Prevalence of episiotomy in the study was 62.1% (411/662). The episiotomy rate for booked women (65.6%, 376/573) was significantly higher than that of un booked women (39.3%, 35/89), (prevalence ratio = 1.67 [95% confidence interval: 1.28, 2.17]). The birth weights of babies delivered in the episiotomy group (median = 3.2 kg inter quartile range (IQR): 2.9-3.5) was statistically higher than those of women who did not receive episiotomy.

Sathiyasekaran BWC, Palani G. (2012) conducted a population based study on to estimate episiotomy rate in a rural population and to find out if higher episiotomy rate is associated with place of delivery and category of health care provider. Samples Included 442 mothers who had vaginal delivery. Cluster sampling was used to select the study sample. Information about episiotomy during last child birth and other details were obtained by personal interview and from available medical records. Overall results of episiotomy rate was 67%. For women whose delivery was conducted by doctors the episiotomy rate was 77.4% and conducted by nurses it was 53.1%. Episiotomy rate was very high that is 91.8% when delivery was conducted in private medical college hospitals.

Alayande BT, Amole IO, David A. (2012) conducted a descriptive study on relative frequency and predictors of episiotomy to determine the rate and risk factors for episiotomies .This retrospective study extracted information on age, occupation, parity, type of vaginal delivery, birth weight of the newborn, and episiotomy status from the case notes of 280 patients and analyzed. The episiotomy rate was 34.3% in the

present study. The rate of episiotomy decreased with parity, with the nulli parous having the highest rate 62.2%. The rate was higher among those who had assisted delivery 80.0% than spontaneous vertex delivery. The episiotomy rate at this centre is high 34.3% in comparison to the recommended 10% by the World Health Organization.

M. Stedenfeld, B J Pirhonen, E Blix, T Wilsgaard. (2012) conducted a Case–control study at Setting University Hospital of North Norway, Seventy-four women who had one vaginal birth and episiotomy. The groups were matched for instrumental delivery. Two groups of women with history of only one vaginal birth were compared. Episiotomy scar was identified and photographed and relevant measures were taken. Data were analyzed using conditional logistic analysis. Main outcome measures Mean episiotomy angle, length, depth, incision point. Results were showed that scarred episiotomies with depth > 16 mm, length > 17 mm, incision point > 9 mm lateral of midpoint and angle range 30–60 are significantly associated with less risk of OASIS.

Saxena Rajiv Kumar, Sandhu Gurpreet, Babu KM. (2010) Conducted a prospective observational study for singleton normal vaginal term deliveries. Deliveries managed with routine use of episiotomy formed the 'Control Group', while those managed with restricted use of episiotomy formed the 'Study Group'. Data so obtained was analyzed. Total number of deliveries analyzed was 458 (Control Group n=210, 'Study Group': n=248). Restricted use of episiotomy led to 64% (n=159) women delivering without any perineal laceration, in 'Study Group'. This translated into 41% (n=38) reduction in the number of perineal lacerations in primi para, and 23% (n=36) in multipara, compared to the 'Control Group'. Only 2% of primi para in 'Study Group' had severe third degree perineal tears. Restricted use of episiotomy resulted in considerable reduction in maternal morbidity due to perineal laceration.

Alperin M, Krohn MA, Parviainen K. (2008) conducted a descriptive study on episiotomy and increases the risk of spontaneous obstetric laceration in the subsequent delivery. A total of 6,052 patients were included, of whom 47.8% had episiotomy at first delivery. Spontaneous second degree laceration at the time of second delivery occurred in 51.3% of women with history of episiotomy at first delivery compared with 26.7% without history of episiotomy (p<.001). Severe lacerations occurred in 4.8% of women with history of episiotomy at first delivery compared with 1.7% without history of episiotomy (p<.001).

Tayac.et.al., (2007) Conducted a descriptive study on episiotomy prevent perineal trauma , urinary incontinence, faecal incontinence and genital prolapse. The 62% of Asian women having risk of severe perineal tears during episiotomy increased in the following circumstances primi parity, instrumental deliveries . (P<.001).Result shows that the routine use of episiotomy did not prevent severe perineal tears. It decreased the risk of moderate anterior perineal lacerations. The risk of severe perineal tears during episiotomy increased in the following circumstances primi parity, Asian women, instrumental deliveries.

Monteiro de Moraes. (2005) A retrospective cross-sectional study was carried out to determine the prevalence and factors associated with practice of episiotomy from January to December 2006 with 495 women. Prevalence of performing episiotomy was 29.1% (n = 144). After bivariate analysis, shows a significant association of episiotomy with adolescence age over 35 years, primi parity, absence of previous vaginal delivery, a group including, in addition to primi parous patients, those who had caesarean delivery in previous gestation and related diseases at the time of delivery.

Sule ST, Shittu SO. (2003) conducted retrospective study to determine the rate and risk factors for episiotomies and perineal trauma at the University of Port Harcourt Teaching Hospital at Nigeria. A retrospective review of vaginal deliveries at the University of Port Harcourt Teaching Hospital, between 1st January 1996 and 31st December 2000. The episiotomy rate in 4720 vaginal deliveries during the period of study was 39.1% in all parturient, while in primi gravida, it was 77.1%. Rates for first and second degree perineal tears in all women were 10.6 and 25% respectively. They concluded that the incidence of episiotomy decreased with increasing parity while the incidence of perineal tears slightly increased with parity. Nulli parity, vaginal, breech deliveries and instrumental vaginal deliveries were identified as risk factors for episiotomy.

Bodner, Adler-B. (2003) conducted a retrospective study to examine the association of episiotomy with the frequency and severity of perineal trauma in women undergoing forceps delivery in semmel weis women's hospital. Episiotomy significantly increased the risk of perineal trauma (odds ratio, 9.91; 95% CI, 1.99-49.34) forceps delivery (odds ratio, 2.53; 95% CI, 1.26-5.08). Results showed that the frequency and severity of perineal tears were significantly lower in forceps deliveries when an episiotomy was performed. Mediolateral episiotomy is the more protective against perineal trauma in women undergoing forceps delivery.

Irene Lenore Pearson Carey. (2000) conducted a observational study over a five and half month period in a 21 bed post partum unit of a 276 bed general teaching hospital to evaluate postpartum perineal healing after delivery of a single fetus in vertex presentation over a mid line episiotomy. A comfort evaluation tool was implemented for the mothers to assess their own comfort before and after use of a randomly assigned comfort measure (e. g., shower, perineal light, sitz bath). The first and second post

partum day healing scores were obtained for all mothers. Interaction of the days with healing scores of primi parae and multi parae was significantly different at the 0.5 level. The primi parae REEDA scores were generally lower for day 1 and 2. It can be concluded the perineal healing scores and episiotomy comfort assessments are no different between mothers matched for primi parity or multi parity using the shower only, the perineal light, or the sitz -bath.

Signorello LB, Harlow BL, Chekos AK, Repke JT. (2000) conducted a experimental study to evaluate the influence of episiotomy on the perineal state after spontaneous singleton vaginal deliveries was done with sample on 2188 pregnant women delivering consecutively. Two approaches were used in the analysis. Initially the parturient were quasi randomised to one of three equally sized groups of midwives with different attitude towards episiotomy. Secondly, the study was continued to find out the effect of episiotomy on the state of anal sphincter. The results encouraged a consecutive approach to the use of medio lateral episiotomy and suggests that episiotomy should be used in, 'one in five, spontaneous vaginal deliveries.

2.2: Literature related to various methods used for episiotomy wound healing

Zahra bagheri. (2017) Conducted a comparative study to compare the effects of curcumin and Povidone-iodine solutions for episiotomy healing in primi parous women. 120 healthy primi parous women with a vaginal delivery at term were evaluated in this double-blind randomized clinical trial. Randomization was done using a table of random list numbers. Perineal healing was evaluated by research midwives blinded to random allocation at 24-48 hours and 10 days postpartum. Pain was assessed via a visual analogue scale and wound healing via the REEDA scale. Analysis was done

on the intention-to-treat principle. The main outcome measure was the changes in wound healing between the two groups as measured by the REEDA Scale. There was a greater decrease in the total scores of the REEDA in the curcumin group than in the Povidone-iodine ($P < 0.001$)

Yashashri Pore. (2014) Conducted a experimental study is to assess effectiveness of moist heat (Sitz bath) and dry heat (infrared light) application on healing of episiotomy wound. Healing of episiotomy is assessed with REEDA scale parameters redness, edema, ecchymosis, discharge and approximation, before and after each application of moist heat and dry heat (30 dry heat and 30 moist heat). Findings of the study revealed that both methods of treatment i.e. moist heat and dry heat were effective in healing of episiotomy wound. The application of moist heat showed greater effect on Edema and Redness whereas it was less effective for Ecchymosis, Discharge and Approximation. The application of dry heat shows equal effect on Redness and Edema, where as it is less effective on Ecchymosis, Discharge and Approximation. The study concludes that the REEDA scale score was higher before treatment but after treatment REEDA scale score was decreased.

Sheoran poonam, ms.chand sulakshana.et.al., (2014) conducted a experimental study is aimed to compare the effectiveness of infrared light therapy vs. sitz bath on episiotomy in terms of episiotomy wound healing among postnatal mothers conducted in Chandigarh. A sample of 60 was selected using purposive sampling 60 postnatal mothers, 30 were treated with infrared light and remaining thirty postnatal mothers were treated with sitz bath. Data was collected using REEDA Scale. The mean value of infrared is 0.09 ± 0.26 and for sitz bath is 0.34 ± 0.48 .No significant association was found between episiotomy wound healing of the postnatal mothers treated with infrared light therapy and sitz bath and selected variables.

Taehan kanho hakhoe chi. (2014) conducted a experimental study designed to verify the effect of lavender oil in sitz bath and lavender soap on a postpartum mother's perineal healing. The design was a clinical trial. They were allocated to one of three groups -sitz bath group, soap application group or control group. Perineal healing status was measured using the REEDA scale and smears of episiotomy wound were obtained. Mean value of lavender oil 0.31 ± 0.33, for lavender soap 1.13 ± 0.55 and for control group 0.62 ± 0.55. Researcher concluded that lavender oil and lavender soap are effective in perineal healing.

Charandabi, Mirghafourvand, Javadzadeh. (2014) Conducted a experimental study to assess the effect of cinnamon on perineal pain and healing of episiotomy incision. In this double-blind, randomized, placebo-controlled trial, 144 postpartum women were allocated into two groups, using stratified block randomization, 1 hour after completion of episiotomy repair. They received cinnamon or placebo ointment, 2 ml every 12 hour for 10 days. Perineal pain and wound healing were assessed using visual analogue scale (0-10) and Redness, Edema, Ecchymosis, Discharge, Approximation scale (0-15), respectively. Pain score in the cinnamon group was significantly lower than that in the placebo group at (4±1) h (adjusted difference: -0.6, 95% confidence interval: -1.0 to -0.2) and (8±1) h (-0.9, -1.4 to -0.3) after intervention, and on the 10-11th day after delivery (-1.4, -2.0 to -0.7). Study concluded that the cinnamon group showed significantly more improvement than the control group in healing score.

Farideh Eghdampour, Homa Dastgheib, shirazi. (2014) Conducted an clinical trial involves 74 qualified primi parous women admitted for labour in Lolagar hospital of Tehran, Iran. They were randomly categorized into intervention (Aloe vera ointment) and control groups (usual hospital protocol). Participant's pain recorded using a Visual Analog Scale (VAS) and Redness, Edema, Ecchymosis, Discharge and Approximation Scale (REEDA). Pain was evaluated at 4th hour, 8th hour, 12th hour and 5 days following episiotomy and wound healing was evaluated 4 hours and 5 days after episiotomy. There were not statistical differences in pain intensity scores in two groups before intervention ($p \leq 0.58$) and 8 hours ($p \leq 0.69$) after episiotomy. But there were statistical differences in pain intensity score 12 hours and 5 days after episiotomy ($p \leq 0$).

Arati mahishale.et.al., (2013) Conducted a experimental study was aimed to evaluate the effectiveness of therapeutic ultrasound and cooling maternal gel pads for perineal pain following vaginal delivery. Control (n-15) and interventional group (n-15) both group selected randomly. Outcome measured by included Visual Analog Scale (VAS) and REEDA scale. The mean value of VAS before intervention was 6.7 ± 1.4 in control group and 7.2 ± 1.6 in experimental group. The mean value of VAS after intervention in control group was 5.8 ± 1.7 with p *value 0.56 and 3.2* ± 1.3 in experimental group. There was statistically significant difference seen in pain score after 3 days of intervention in experimental group with p value 0.02. The mean value of redness was 1.63 ± 0.781, edema 1.38 ± 0.48, ecchymosis 0.78 ± 0.96, discharge 0.24 ± 0.31, approximation 1.47 ± 0.26 before intervention in control group and the mean value of redness 1.8 ± 0.71, edema 1.46 ± 0.56, ecchymosis 0.5 ± 0.83, discharge 0.3 ± 0.42 and approximation 1.61 ± 0.34 experimental group. There was no statistically significant difference in both group.

Dudley lm, kettle.et.al., (2013) conducted a experimental study **e**ach year approximately 350,000 women in the United Kingdom and millions more worldwide, experience perineal suturing following childbirth. To evaluate the therapeutic effectiveness of secondary suturing of dehisced perineal wounds compared to non-suturing. Randomized controlled trials used. Debridement given**.** significant (risk ratio (RR 1.69, 95% confidence interval (CI) 0.73 to 3.88, one study, 17 women) .Only one trial reported on rates of dyspareunia at two months and six months with no statistically significant difference between both groups; two months, (RR 0.44, 95% CI 0.18 to 1.11, one study, 26 women) and six months, (RR 0.39, 95% CI 0.04 to 3.87, one study 32 women).

Molkizadeh.et.al., (2013) Conducted a experimental study to verify the evaluation of lavender cream effect on perineal pain and episiotomy wound healing in 100 primiparous women with term pregnancies requiring surgical repair of episiotomy following a normal and spontaneous delivery at Moderre's hospital in Kashmar. The effectiveness was assessed for perineal pain by VAS and wound healing by REEDA scale at first 24 hrs, 3rd, 5th and 7th day postpartum. The data was analyzed with chi-square, mann whitney 'u" and t-test and analysis in spss software. At 5th day (0.002), and 10th day (P=0.0) there was significant difference between two group. The study concluded that the topical application of lavender cream was effective in reliving perineal pain and episiotomy wound healing.

Navdeep Kaur, Avinash Kaur Rana, Vanita Suri. (2013) Conducted an Comparative study on effect of dry heat versus moist heat was aimed at relieving pain and promoting wound healing at the episiotomy site at Maternity ward, Gynaecology ward, Clean labor room and Gynaecology OPD at Chandigarh. 86 subjects were enrolled by purposive sampling and later on allocated randomly into two groups (group 1- dry heat, group 2- moist heat). Tool for pain measurement was modified numerical pain rating scale and for wound healing was modified REEDA (Redness, Ecchymosis, Edema, Discharge, Approximation) scale. Findings of study revealed a highly significant difference between the groups in terms of pain scores and wound healing [$p<0.001$ on day 7 and $p<0.01$on day 14 for pain scores] and [$p<0.001$ on day 7 and $p<0.05$ on day 14 for wound healing scores]. Though both the interventions were effective but dry heat was more effective than moist heat in relieving pain and promoting wound healing at the episiotomy site.

Farideh Eghdampour1, Fereshteh Jahdie1, Masomeh Kheyrkhah. (2013) Conducted a comparative study to determining the impact of Aloe vera and Calendula on episiotomy healing in primiparous women. This clinical trial involves 111 qualified primiparous women admitted in Lolagar hospital. They were randomly categorized into three groups of control (n=1) and experimental (n=2) groups. The women in experimental group used Aloe vera and Calendula Ointment every 8 hours and the control group used hospital routine on episiotomy for 5 days. The data were collected by demographic questionnaire and redness, edema, ecchymosis, discharge and approximation scale (REEDA) which investigated the episiotomy healing before and five days after intervention in two groups. The three groups do not have statistically significant different regarding demographic and other intervening variables. According

to the results, using Aloe vera and Calendula ointment considerably increases the speed of episiotomy wound healing so it can be used for quickening the episiotomy healing.

Hoda Abed El-Azim Mohamed. (2012) Conducted an Quasi experimental study to evaluate the effect of self perineal care instructions on episiotomy pain and wound healing of postpartum women. A total of eighty postpartum women (experimental and control groups each group consisted of 40 women) were recruited randomly for this study from the postpartum ward at El- Minia General Hospital. Tools used for data collection consisted of interviewing sheet, the numerical rating scale (NRS), the standardized REEDA Scale and follow up sheet. A highly statistical significant difference between groups in relation to the interference of painwith walking, sitting, and urination at 24 & 48 hours, and at seven days postpartum. Reduction in the REEDA scores of wound healing in experimental group as compared to control group. The study that, women who received and practice self perineal care instructions on episiotomy pain and wound healing during postpartum period have lower the level of postpartum episiotomy pain scores, decrease pain related to perineal episiotomy which interfere with women's daily activities postpartum, such as walking, sitting, urination and defecation, and better wound healing progress.

Ivnov.et.al., (2007) conducted prospective study on clinical application of boniest (hyaluronic acid sodium salt) in wound care by caesarean section and episiotomy among 27 patients, delivered by caesarean section and 20 patients with vaginal delivery with episiotomy were included in Bulgaria.15 cases from caesarean section group and 10 cases from episiotomy group daily application of bionect was performed. Standard wound care was applied in 12 caesarean section wounds and 10 episiotomies. All patients were monitored for wound healing disturbances on daily basis. The study finding revealed that the incidence of edema, infiltration, exudation

and superficial blood collections was significantly lower in case of bionect application. Before the intervention, significant differences were observed between the pre and post test in terms of their personal and obstetric details ($p > .05$), the severity of pain ($p = .118$), and the REEDA score ($p = .212$). On the 5th and 10th days after delivery, the severity of pain was significantly lower in the post test. The mean REEDA score on the 5th and 10th days showed a better and faster healing in the post test.

Tejirian.et.al., (2006) conducted a experimental study to justify and support the recommendation of sitz bath in the management of ano-rectal disorders. Thirty six articles were found which highlighted the physiology, benefits, risks, complications and techniques of sitz bath. This study conducted that sitz bath induces relaxation of the internal sphincter muscle and cold sitz bath was reported to decrease perineal edema. there was significant difference between the pre and post test score. No significant difference in postoperative mean pain score between groups (P = 0.234) was noticed. Likewise, no relevant differences in analgesic requirements between sitz bath and no sitz bath group (P = 0.435) were seen. The satisfaction score was higher in the sitz bath group when compared with the control group;

Hur.et.al., (2005) conducted a comparative study to verify the effect of aroma-sitz bath with aroma- soap application on perineal healing on 100 postpartum mothers. The effectiveness was assessed by REEDA scale and smear of episiotomy wound. The study related that REEDA scale was significantly low in the experimental group at postpartum 5th and 7thday (P=.0009,P=.003) and few bacteria were observed in the smears of episiotomy wound. In the study they concluded that aroma-sitz bath is more effective in healing episiotomy.

Hur and Han. (2004) Conducted an Clinical trail of aromatherapy in post partum mothers perineal healing reported by The purpose of the study to verify the effects of aromatherapy on a post partum mothers perineal healing. Research suggested that the REEDA scale was significantly low in the experimental group. This study finding indicates postpartum aroma sitz bath for perineal care could be effective in healing. There is a significant positive effect of aromatherapy (compared to placebo or treatments as usual controls) in wound healing reported on a REEDA scale (SMD = −1.18, 95% CI: −1.33, −1.03; $p < 0.0001$). Based on the available research, aromatherapy is most effective in treating episiotomy wound healing (SMD = −1.79, 95% CI: −2.08, −1.51, $p < 0.0001$) and obstetrical and Gynaecological pain (SMD = −1.14, 95% CI: −2.10, −0.19, $p < 0.0001$).

2.3 Literature related to effect of sodium chloride application on episiotomy wound healing:

Ashmei Q Patelco. (2017) conducted a comparative study to determine the effectiveness of antiseptic solution, tap water and sodium chloride solution in the healing of wound. Group I was treated with antiseptic solution, group II with tap water, group III with sodium chloride application. The wound was dressed with antiseptic solution, normal saline, and tap water. Healing of the wound measured on 9th day. The result shown that an inhibitory effect of antiseptic solution in wound healing. Wound infection was occurred on all the wound cleaned with antiseptic solution. The wound had greenish exudate on their surfaces. There was delayed healing in this group compared to other two groups. Women in the normal saline group rated the effectiveness of their localised treatment to be significantly higher than women in the other two treatment groups (p<0.0005).There was a statistical difference in the rate of healing in the saline and tap water dressed wounds.

Aida Najafian.et.al., (2016) Conducted a randomized control trial study , 56 women with post-surgical superficial wound dehiscence were divided into two groups in a 1:1 ratio. One group was irrigated with normal saline for irrigation and Firooz baby soap and the other with normal saline for irrigation and povidone iodine. Formation of granulation tissue was monitored in both groups. Also, the reason for surgery, length of wound dehiscence, and duration of hospitalization and wound union after were compared in both group's. The soap group patients were irrigated for 4.18 ± 1.96 days compared to 5.36 ± 2.83 days for the patients in povidone-iodine group (P = 0.414). The granulation tissue was formed after 3.88 ± 1.94 days in the soap group compared to 4.48 ± 2.92 days in the other group (P = 0.391), and the duration of hospitalization was 5.48 ± 2.04 days in the soap group compared to 6.3 ± 2.95 days in the other group (P = 0.423). So, no differences were observed between the two groups. It can be concluded since there is no difference between the results of two groups, irrigation with normal saline and soap is safe, easy and causes no harm or allergy compared with povidone iodine.

Nice clinical guidelines. (2015) was conducted an experimental study to the efficacy of topical application of Sodium chloride in episiotomy wound. The sample included 60 interventional 30 and control group 30 . The samples are randomly assigned in two groups. Sodium chloride was applied on 30 episiotomy wound and 30 control group . According to the categories of REEDA scale score, in pre treatment assessment, more than 90% subjects of both control as well as experimental group were laying in poor category ($\chi 2$ = 0.3770, p = 0.8282). No one was having good category. post treatment analysis revealed that significantly high proportion of post natal mothers (92.64%) were having good category of wound healing while no one from control group was having good category ($\chi 2$ = 403.554, p < 0.001).

Aiksaw.et.al., (2015) was conducted a comparative study to assess the effectiveness of normal saline and betadine application on episiotomy wound. This study included 120 multiparous women with episiotomy and were randomly assigned into experimental and control group. For the patients in the experimental group, 10cc normal saline, 9 in 1000 cc, was sprinkled on episiotomy wound by a sterile syringe, three times a day for ten days. In the control group, 10% povidone iodine solution, 3 tablespoons in 4 glasses of water three times a day. Episiotomy wound were checked based on the standard REEDA checklist on the fifth and tenth day after episiotomy. The mean and standard deviation of episiotomy pain score of control group participants were high in both observation II and III on all three days (M=4.9, SD=0.8 and M=4.4, SD=0.8, M=3.6, SD=0.8 and M=3.2,SD=0:8, M=2.4, SD=0.9 and M=2.1,SD=0.9), respectively, in comparison with the experimental group (M=2.9, SD=0.9 and M= 1.8, SD=0.9, M=1.3, SD=1.0 and M=0.4, SD=0.6, M=0.2, SD=0.4 and M=0.02, SD=0.09). The difference was statistically significant at $p<0.001$ level The result shown that there is a significant difference in the healing of episiotomy wound in both groups. The study concluded that normal saline has more effect than betadine on episiotomy wound healing.

Mahtab. (2015) conducted a study to compare the effect of saline normal healing with Povidon Iodine on episiotomy in nulliparous by randomized control clinical trial among 120 nulliparus women at Taleghany Maternity House at Arak, Iran. They were randomly assigned to receive either normal saline 10cc (case group) or Povidon Iodine (control group) TDS for irrigation the episiotomy. They were visited for wound healing with REEDA chek list in 5th and 10th days of post parum. The data were analyzed with T test, $\chi 2$ and Mann-whittney "U". There was no significant difference between two groups in mean of redness, edema, infection at 5th and 10th,

discharge, ecchymosis at 5th and approximation in 10th days of post-partum. In 5th day mean of wound approximation was less in normal saline than Povidon Iodine group [0.73(±0.71), 0.57(±0.47)] (P<0.04) respectively. In 10th day in case group mean of ecchymosis and discharge [0.52(±0.36), 0.56(±0.36)] was more than control group [0.37(±16),0.36(±0.10)] (P<0.02, 0.007) respectively.

Thomas petne. (2013) was conducted a comparative study to assess the effectiveness of normal saline versus other solution on episiotomy wound healing among post natal mothers. The total sample consists of 40 post natal mothers. They were randomly divided into 20 in experimental group where normal saline was applied and 20 in control group where other solutions were applied on episiotomy. The result revealed that in experimental group 84% satisfactory epithelialization by 7th day and 100% by 21st day, whereas episiotomy wounds treated with other solutions showed 72% epithelialization by 7th day and 84% by 21st day. Reparative activity was seen in 80% of wounds treated with the normal saline dressing by the 7th day with minimal inflammation. The study concluded that normal saline is effective in healing of episiotomy.

Williams H. (2012) was conducted comparative study to assess the effect of water and soap irrigation with Povidone-iodine and normal saline in the treatment of patient with ununion episiotomy wound. The study included 40 samples. In group I water and soap has been used while in group II normal saline and Povidone-iodine had used for irrigation of ununion episiotomy wound. The result shown that 40% of episiotomy wound closure has been occurred faster in normal saline and povidone-iodine group. In water and soap irrigation group 20% episiotomy wound got infection. The study concluded that Povidone- iodine and normal saline enhance the episiotomy wound closure.

R.davis. (2012) was conducted an experimental study to compare chlorhexidine-alcohol versus povidone iodine for surgical site asepsis. In this study 849 subjects were selected randomly. There were 409 patients who preoperatively cleansed with chlorhexidine alcohol whereas 440 were cleansed with povidone iodine. Presence of infection was assessed after 30 days. The overall rate of infection was significantly lower in chlorhexidine alcohol group than povidone iodine group(9.5% v/s 16.1% p<0.04;relative risk 0.59,95% confidence interval,0.41 to 0.85).Chlorhexidine alcohol was significantly more protective than povidone iodine against both superficial incision infections(4.2% vs 8.6%,p=0.008) and deep incisional infection(1% vs 3%,p=0.05)but not against organ space infection(4.4% vs 4.5%). Study concluded that preoperative cleansing of patient's skin with chlorhexidine-alcohol is superior to cleansing with povidone iodine for preventing surgical site infection after surgery.

Grant. (2011) was conducted a retrospective study to compare the rate of wound healing and cost of wound care associated with wet-to-dry normal saline gauze dressings with amorphous hydrogel dressings for patients with diabetes. The study included 50 samples. They were randomly divided into wet-to-dry normal saline gauze dressings (n=25) and amorphous hydrogel dressings (n= 25) groups. The study revealed a similar rate of wound healing in the two groups. The wound healing was significantly higher (P = .006) for patients in the normal saline group. The study concluded that the two treatments are equally efficacious in promoting wound healing, but normal saline gauze dressing is significantly more cost effective.

Camilo. (2009) was conducted a quasi experimental study to assess the effectiveness of ice pack containing normal saline on the episiotomy wound. The aim was to assess the level of pain, inflammation and bruising of episiotomy wound. The results shown that the mothers had significantly less pain on episiotomy wound. After

calculating z-value was identified and result showed that p-value was non-significant as it was greater than 0.05 in each condition. The above finding is supported that the rating in all degrees of healing showed a statistically significant difference between the two case and control group normal saline group at $p < 0.0001$ level and control group $p > 0.05$. The demographic variables of postnatal mothers such as age, parity, body weight, Hb gm% level and reason for episiotomy did not have any role as p-value was more than 0.05 ($p > 0.05$).The study concluded that the application of ice pack containing normal saline can be used in the post-natal wards and in home setting as well.

Suresh k Sharma. (2006) was conducted a comparative study on the effect of betadine and normal saline in episiotomy wound healing. The objective of the study is to determine the effectiveness of betadine and normal saline in episiotomy wound healing The clinical trial strategy of the study was conducted on 100 cases 50 were given with betadine and 50 with normal saline and the efficacy was determine according to wound healing redness infection and suture absorption at 1st, 5th ,10th post operation. The results of independent t test p values are significant only on day 1 of 0.01, and Paired t test show a significant difference ($p = 0.00$) in the control group only at day 1 to 2 with a mean of 15. In the intervention group have a significant difference on day 1 to 2 ($p = 0.00$, mean = 31.7) and on day 2 and 3 (p = 0:04, mean = 5.7). Result shows that normal saline is more effective in episiotomy wound healing during postpartum.

PART -II

CONCEPTUAL FRAMEWORK

A conceptual framework can be set of concepts and assumptions that integrate them into a meaningful configuration (Fawcett, 1994).The concept is a thought, idea or mental image framed in mind in response to learning something new. A framework is a basic structure supporting anything. A conceptual framework deals with abstraction (concept), which is assembled by nature of their relevance to a common theme. (Chris Tension J.Paula and Kenny Janet w,1990).

It is network of interrelated concepts that provides the structure of organizing and describing the phenomenon of interest (Talbot, 1995). It deals with abstraction, which is assembled together by virtue of their relevance to a common thing (Polit)

A conceptual framework is made up of concept which are mental image of the phenomenon. These concepts are linked together to express the relationship between them. A model is used to denote symbolic representation of the concepts.

One of the important purpose of conceptual framework is to communicate clearly the interrelationship of various concepts. It guides an investigator to know what data needs to be collected and give direction to the entire research process, (keringer 1993).

This study was aimed at evaluate the effectiveness of sodium chloride application on episiotomy wound healing on postnatal mothers. The conceptual framework of this study is based on “General Systems Theory”. The general system theory was proposed by Ludwig von and bertalanffy in the year 1968. This theory was purely based on the elements to clinical nursing practice which includes philosophy, purpose, practice and art. The art of nursing includes understanding client needs and

concern, developing goals and actions intended to enhance the ability and directing the activities related to nursing plan to prevent infections and complications. The components of this theory focuses on three systems such as input, process and output.

Input

The input is the first component of a system in which information, energy, or matter that enters a system. For a system to work well, input should contribute in achieving the purpose of the system. Maintenance inputs (energic imports that sustain system).production inputs energic imports which are processed to yield a productive outcome. For a system to work well, input should contribute in achieving the purpose of the system.

In this study the input is researcher initially assess the episiotomy wound healing by Redness, Edema, Ecchymosis, Discharge and Approximation of wound edges (REEDA) scale (pre test) along with socio demographic variables such as Age ,education, occupation, monthly income, type of family, food habit and obstetrical variables such as Mothers BMI, Weeks of gestation, weight of baby at birth, mode of delivery, length of episiotomy, history of perineal infections. After selecting the samples intervention was given with sodium chloride application two times a day for three consecutive days for interventional group along with routine care and routine care only given to control group.

Process

Process is the second component in which it allows the input to be changed, so that it is useful to the system. The matter, energy and information are continuously processed through the system which is also called complex transformation known as throughput. Process is the use of biologic, psychologic and socio-cultural sub systems to transform the inputs. Work done on those resources used to produce a product

In this study it consider throughput as mechanism of sodium chloride (biological sub system) along with socio demographic and obstetrical variables (socio cultural subsystem) to transform the input. The biological sub system of sodium chloride application improves epithelialisation and soothes the sore tissues, keeps the area clean and prevents infection and helps with circulation. It helps to remove things that can irritate the underlying tissue as well as help to wash out bacteria. It relieves stiffness and muscle cramps and reduces redness and oedema and hastens the healing of episiotomy.

Output

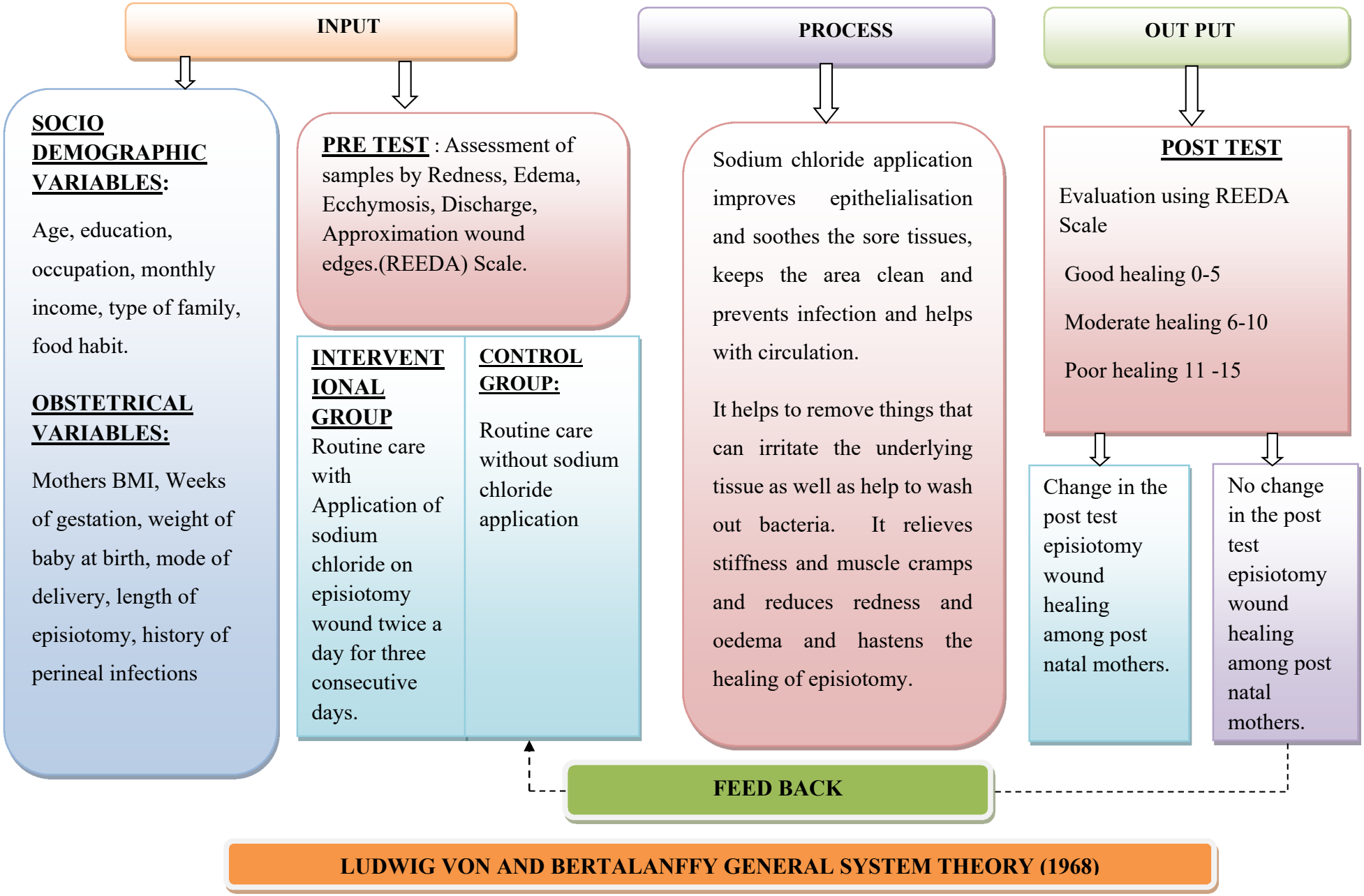
Output is the third component of the system. Evaluating the outcome of the study results. It is the return of matter, energy and information to the environment in the form of both physical and psychosocial behaviour. System returns the product to the environment process, provides a series of mechanical or chemical operations on something in order to change or preserve it.

In the present study output is a expected outcome by using Redness, Edema, Ecchymosis, Discharge and Approximation of wound edges (REEDA) Scale. Good healing 0-5, Moderate healing 6-10, Poor healing 10 -15.

Feedback

Feedback is the final component of the system to determine whether or not the end result of the system has been achieved. Feedback emphasizes the effect of the input, process, output. Information and environmental responses by the system needs, correction and accommodation to the interaction with the environment.

In the present study, feedback refers to difference between pre test and post test wound healing and it is assessed by Redness, Edema, Ecchymosis, Discharge and Approximation of wound edges (REEDA) Scale.


INPUT
PROCESS
OUT PUT
SOCIO DEMOGRAPHIC VARIABLES:
Age, education, occupation, monthly income, type of family, food habit.
OBSTETRICAL VARIABLES:
Mothers BMI, Weeks of gestation, weight of baby at birth, mode of delivery, length of episiotomy, history of perineal infections
PRE TEST : Assessment of samples by Redness, Edema, Ecchymosis, Discharge, Approximation wound edges.(REEDA) Scale.
INTERVENTIONAL GROUP
Routine care with Application of sodium chloride on episiotomy wound twice a day for three consecutive days.
CONTROL GROUP:
Routine care without sodium chloride application
Sodium chloride application improves epithelialisation and soothes the sore tissues, keeps the area clean and prevents infection and helps with circulation.
It helps to remove things that can irritate the underlying tissue as well as help to wash out bacteria. It relieves stiffness and muscle cramps and reduces redness and oedema and hastens the healing of episiotomy.
POST TEST
Evaluation using REEDA Scale
Good healing 0-5
Moderate healing 6-10
Poor healing 11 -15
Change in the post test episiotomy wound healing among post natal mothers.
No change in the post test episiotomy wound healing among post natal mothers.
FEED BACK
LUDWIG VON AND BERTALANFFY GENERAL SYSTEM THEORY (1968)

Research Methodology

CHAPTER-III

RESEARCH METHODOLOGY

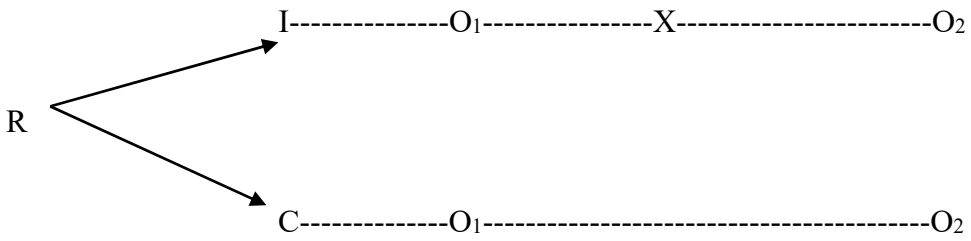
Research methodology includes the research design, variables of the study, setting, population, sample, criteria for sample collection, sampling technique, sample size, description of the tool and scoring method, content validity, pilot study, procedure for data collection, plan for statistical analysis, protection of human rights and schematic representation of the study. The present study aimed to evaluate the effectiveness of sodium chloride application on level of episiotomy wound healing among postnatal mothers admitted at Government Rajaji hospital, Madurai.

3.1 Research Approach

A quantitative approach was used to test the effectiveness of sodium chloride application

3.2 Research design

The design used in this study is true experimental design.



R- Randomization

I- Interventional group

C- Control group

O_1- Pre test assessment of episiotomy wound healing both interventional and control group

X- Sodium chloride application

O_2- Post test level of episiotomy wound healing both interventional and control group.

3.3 Research variables

Independent variable

In this study the independent variable is sodium chloride application to the postnatal mothers.

Dependent variable

In this study dependent variable is episiotomy wound healing among postnatal mothers.

Socio demographic variables

Socio demographic variables consist of age, education, occupation, monthly income, type of family, food habit.

Obstetrical variables

Obstetrical variables consist of mothers BMI, weeks of gestation, weight of baby at birth, mode of delivery, length of episiotomy, history of perineal infections.

3.4 Setting of the study

The study was conducted among postnatal mothers who are admitted in the postnatal ward at Government Rajaji Hospital Madurai. Multi Speciality Medical College attached Hospital and it provides a comprehensive care. Madurai Medical College is the second largest hospital in Tamil Nadu by man power and serving the poor people. Department of obstetrics and gynaecology consists of 550 beds, the total number of deliveries per month is 1000 approximately. The study was be conducted in postnatal wards of Government Rajaji Hospital Madurai.

3.5 population

Target population

All primi postnatal mothers with medio lateral episiotomy

Accessible population

Postnatal mothers admitted in Government Rajaji Hospital Madurai.

3.6 Sample

The study comprised of Postnatal mothers admitted at Government Rajaji Hospital, Madurai and fulfilled the inclusion criteria for sample selection.

3.7 Sampling technique

The subjects were selected by probability (simple random) sampling technique.

3.8 Sample size

The sample of the study is comprised of 60 postnatal mothers (30 interventional group and 30 control group).

3.9 Criteria for sample selection

Inclusion criteria

The study includes postnatal mothers

1. Who have normal vaginal delivery with mediolateral type episiotomy.
2. Who have normal vaginal delivery after 24 hours of delivery.
3. Who have undergone manipulative procedures like forceps or vacuum delivery.
4. Who have 3rd degree or 4th degree perineal tear.

Exclusion criteria

The study excludes postnatal mothers

1. Mothers who are having immediate postnatal complications.
2. Mothers who have undergone Lower Segmental Caesarean Section.
3. Mothers who are all having heavy vaginal bleeding with episiotomy.

3.10 Research tool and technique

The tool was developed and standardized from extensive review of literature, internet research and discussion with experts.

Description of tool

The tool consists of two sections.

Section-A

Part-I

Socio Demographic data

It consists of a structured interview schedule, it has a questions related to the socio demographic data of primi postnatal mothers.

Part-II

It consists of age in years, education, occupation, monthly income, type of family, food habit, mothers' BMI, weeks of gestation, weight of baby at birth, mode of delivery, length of episiotomy, history of perineal infections.

Section-B

REEDA SCALE developed by Davidson (1968). It consists of 5 components Redness, Edema, Ecchymosis, Discharge, Approximation of wound edges. Each components have the maximum score of 3 and minimum score of 0. When the score increases that indicate the poor healing and the score decreases indicates good healing.

Scoring Interpretation

SCORE	HEALING
0-5	Good healing
6-10	Average healing
11-15	Poor healing

Intervention procedure

The investigator administered the intervention as mentioned below: Take sodium chloride solution in a bowl. Take a sterile cotton roll and dip it into the solution and squeeze it properly. Clean the episiotomy wound from forchette to anus. Repeat this procedure for four times with different sterile cotton. Wipe it with dry cotton. Make it clean and dry. Repeat the procedure twice in a day for three consecutive days. By the end of 3rd day immediately after the intervention assess the level of healing of episiotomy wound by REEDA scale.

Testing of tool

Validity

In order to measure the content validity, the questionnaire was given to experts in the field of Obstetrics and Gynaecology. They were judge the items for clarity relatedness, meaningfulness and adequacy of the contents. Tool was translated into Tamil and retranslated to English to confirm the language validity.

Reliability

The reliability of a measuring instrument is a major criterion for assessing its quality and adequacy. Reliability is the consistency with which it measures the target attribute. The reliability of the tool was done by correlation coefficient method $r = 0.86$. Hence the tool was consider as reliable and was used in this study.

3.10 Pilot Study

A formal permission was obtained from Ethical committee and obstetrical and Gynaecological department Government Rajaji Hospital, Madurai. The pilot study was conducted at above department for a period of 7 days from 21/05/18 to 28/05/18. Samples were selected as per the inclusion criteria by using simple random method in postnatal ward. In which the interventional group receives Intervention of sodium chloride application two times a day for three consecutive days. The study was

practically feasible to be conducted with a larger sample size.

3.11 Procedure for data collection

After obtaining permission from Ethical committee of Government Rajaji Hospital Madurai-20 and the data collection was done from 04/06/18 to 13/07/18.

Rapport established with postnatal mothers after a brief introduction about the study and its purpose. The written and oral informed consent was obtained from the mothers after fully explaining the procedure of the study. On the first day of data collection the researcher selected samples as per the inclusion criteria followed by using simple random method. Samples were selected from postnatal ward for both interventional and control group first postnatal day. Pre test data was collected by the researcher using the REEDA scale for both interventional group and control group. In which the interventional group receives sodium chloride application twice a day for three consecutive days. Routine care for control group. Post test were conducted after 3 days using REEDA scale for both the groups. Same procedure followed for 4 weeks until the fulfilment of required samples.

3.13 Plan for data analysis

The data analysis involved the translation of information collected during the course of research project into an interpretable and managerial form. It involved the use of statistical procedures to give an organization and gives meaning to the data.

Descriptive and inferential statistics used for data analysis.

Descriptive Statistics

1. Analysis of baseline data was done by using frequency and percentage
2. The level of episiotomy wound healing of postnatal mothers was analyzed by computing frequency, percentage, mean and standard deviation.

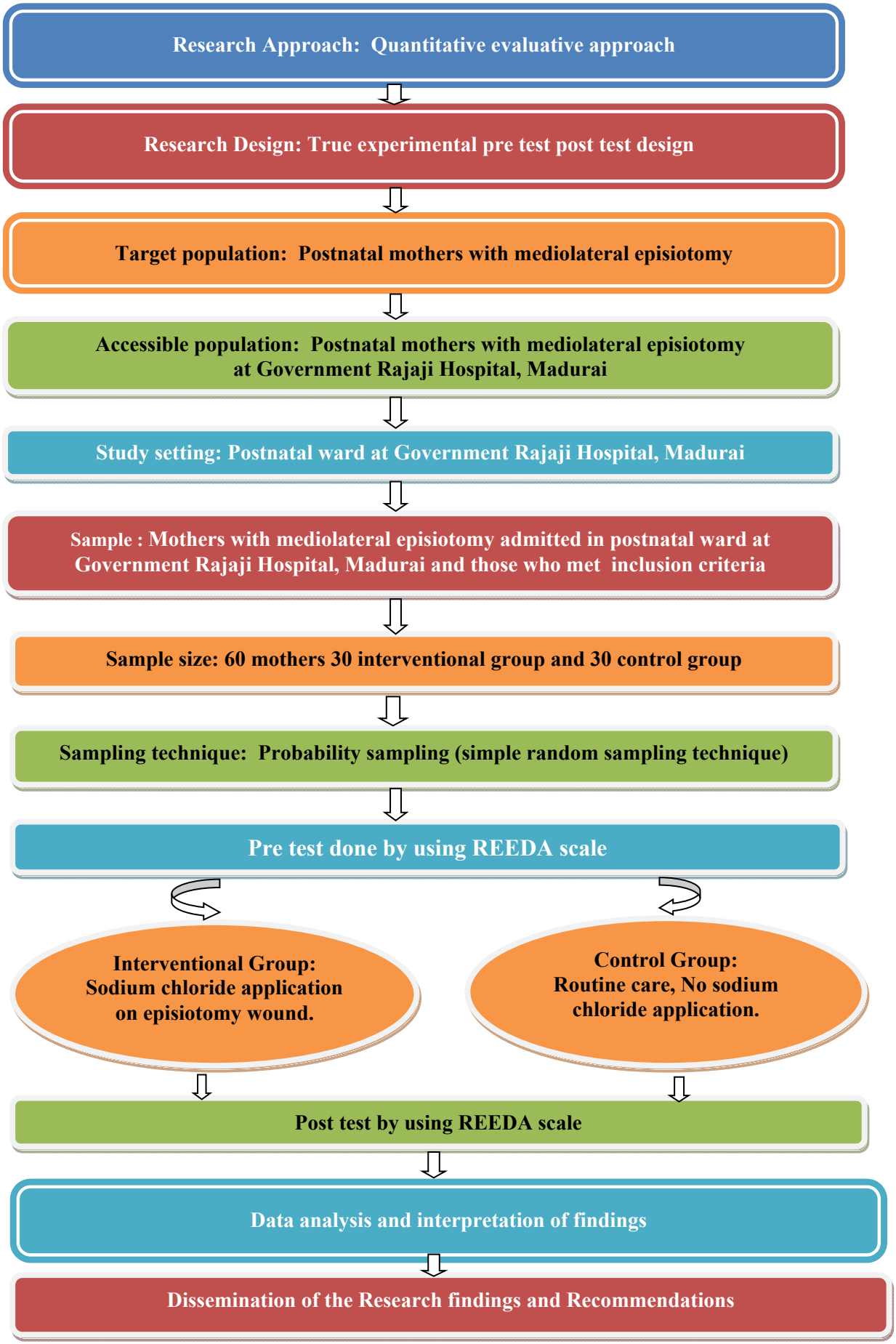
Inferential Statistics

1. Paired t-test was used to evaluate the effectiveness of sodium chloride application among postnatal mothers.
2. Chi-square analysis was used to analysis association between pre-test episiotomy wound healing of postnatal mothers with their selected demographic variable.

3.14 Protection of human rights

Research proposal was approved by the Ethical committee. Prior to the pilot study and the main study permission was obtained from the Principal, college of nursing and professors of Obstetrical and Gynaecological department , Government Rajaji Hospital, Madurai. An informed oral and written consent of each study samples was obtained before starting the data collection. Positive benefits was explained to all the study subjects. They were also explained that they withdraw from the study at any time. Assurance was given to the subjects that confidentiality would be maintained throughout the study.

3.15 SCHEMATIC REPRESENTATION OF METHODOLOGY



Data Analysis and Interpretation

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

"Data analysis is the process of bringing order, structure and meaning to the mass of collected data".

-MARSHELL AND ROSSMAN (1999)

Analysis is the process of categorizing, ordering, manipulating and summarizing of data to obtain an answer to the research question. The purpose of the analysis is to reduce the data to intelligible and interpretable form, so that relations for the research problem can be studied and tested.

This chapter deals with analysis and interpretation of data collected from 60 samples that is 30 in interventional group and 30 in control group to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers at Government Rajaji Hospital, Madurai.

4.1 Organization of the data

The analysis and interpretation of data was organized under the following sections

Section - I Distribution of socio demographic and obstetrical variables among postnatal mothers in interventional and control group

Section - II Description of pre test and post test level on episiotomy wound healing among postnatal mothers in interventional and control Group.

Section- III Effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers

Section-IV: Comparison of pre test and post test level of episiotomy wound healing among post natal mothers in interventional and control group

Section - V: Association between episiotomy wound healing among post natal mothers in interventional and control group with their socio demographic and obstetrical variables

Section – I

Distribution of Socio demographic and obstetrical variables among postnatal mothers in Interventional and control Group

Table – 1

Frequency and percentage distribution of subjects according to their socio demographic and obstetrical variables

n=60

Socio demographic variables		**Group**				χ^2
		Interventional (n=30)		**Control (n=30)**		
		f	**%**	**f**	**%**	
1. Age	18-22 years	10	33.33%	10	33.33%	χ2=0.47 P=0.78 (NS)
	23 -27 years	13	43.33%	15	50.00%	
	28 -32 years	7	23.34%	5	16.67%	
	>32 years	0	0.00%	0	0.00%	
2. Education	No formal education	2	6.67%	2	6.67%	χ2=7.24 P=0.07 (NS)
	Primary education	7	23.33%	4	13.33%	
	Higher secondary education	8	26.67%	18	60.00%	
	Graduate	13	43.33%	6	20.00%	
3. Occupation	House wife	15	50.00%	19	63.33%	χ2=1.24 P=0.53 (NS)
	Coolie	0	0.00%	0	0.00%	
	Private employee	7	23.33%	6	20.00%	
	Government employee	8	26.67%	5	16.67%	
4. Monthly income	Rs.2500-Rs.3000	0	0.00%	0	0.00%	χ2=0.66 P=0.72 (NS)
	Rs.3001-Rs.4000	2	6.67%	3	10.00%	
	Rs.4001-Rs.5000	11	36.66%	13	43.33%	
	Above Rs.5000	17	56.67%	14	46.67%	

5.Type of family	Nuclear family	12	40.00%	13	43.33%	χ2=1.15 P=0.56 (NS)
	Joint family	18	60.00%	16	53.34%	
	Extended family	0	0.00%	1	3.33%	
	Separated family	0	0.00%	0	0.00%	
6.Food habit	Vegetarian	9	30.00%	11	36.67%	χ2=0.30 P=0.58 (NS)
	Non vegetarian	21	70.00%	19	63.33%	

OBSTETRICAL VARIABLES

7.Mother's BMI	<18.5	0	0.00%	0	0.00%	χ2=0.21 P=0.64 (NS)
	18.6- 25	27	90.00%	28	93.33%	
	26-30	3	10.00%	2	6.67%	
	> 35	0	0.00%	0	0.00%	
8.Weeks of gestation	38 weeks	12	40.00%	15	50.00%	χ2=4.50 P=0.21 (NS)
	39 weeks	10	33.33%	13	43.33%	
	40 weeks	7	23.34%	2	6.67%	
	>40 weeks	1	3.33%	0	0.00%	
9.Weight of baby at birth	2.5 to 3 kg	16	53.33%	16	53.33%	χ2=1.03 P=.59 (NS)
	3.1 to 3.5kg	13	43.34%	14	46.67%	
	3.6 to 4 kg	1	3.33%	0	0.00%	
	Above 4.1 kg	0	0.00%	0	0.00%	
10.Mode of delivery	Forceps delivery	4	13.33%	4	13.33%	χ2=0.13 P=0.93 (NS)
	Normal vaginal delivery	22	73.34%	21	70.00%	
	Vaccum delivery	4	13.33%	5	16.67%	
11. Length of episiotomy	2 cms	0	0.00%	0	6.67%	χ2=2.10 P=0.35 (NS)
	3 cms	21	70.00%	19	63.33%	
	4 cms	9	30.00%	9	30.00%	
	5 cms	0	0.00%	2	6.67%	
12. History of perineal infections	Yes	0	0.00%	0	0.00%	χ2=0.00 P=1.00 (NS)
	No	30	100.00%	30	100.00%	

Table 1 explains the distribution of subjects according to their socio demographic and obstetrical Variables.

In the aspect of age in interventional group, majority of the subjects 13 (43.33%) belongs to the age group between 23-27 years, 10 (33.33%) belongs to the age group between 18-22 years and remaining 7 (23.34%) belongs to the age group between 28-32 years. In control group, majority of the subjects 15 (50%) belongs to the age group between 23-27 years, 10 (33.33%) belongs to the age group between 18-22 years and remaining 5 (16.67%) belongs to the age group between 28-32 years.

When determining the education in interventional group, majority of the subjects 13 (43.33%) studied up to graduate, 8 (26.67%) studied up to higher secondary education, 7 (23.33%) studied up to primary education, remaining 2 (6.67%) had no formal education. In control group, majority of the subjects 18 (60%) studied up to higher secondary education, 6 (20%) studied up to graduate, 4 (13.33%) studied up to primary education and 2 (6.67%) had no formal education.

Illustrating the occupation in interventional group, majority of the subjects 15 (50%) were housewife, 8 (26.67%) were Government employee and remaining 7 (23.33%) were private employee. In control group, majority of the subjects 19 (63.33%) were housewife, 6 (20%) were private employee and remaining 5 (16.67%) were Government employee.

About monthly income in interventional group, majority of the subjects 17 (56.67%) were earned more than Rs.5001, 11 (36.66%) were earned between Rs.4001-Rs.5000and remaining 2 (6.67%) were earned between Rs.3001- Rs.4000. In control group, majority of the subjects 14 (46.67%) were earned more than Rs.5001, 13 (43.33%) were earned Rs.4001-5000 and remaining 3 (10%) were earned between Rs.3001-Rs.4000.

Based on the type of family in interventional group, majority of the subjects 18 (60%) were joint family, 12 (40%) were nuclear family. In control group, majority of the subjects 16 (53.34%) were joint family, 13 (43.3%) were nuclear family and remaining 1 (3.33%) was extended family.

When comparing the food habit in interventional group, majority of the subjects 21 (70%) were non-vegetarian and remaining 9 (30%) were vegetarian. In control group, majority the subjects 19 (63.33%) were non-vegetarian and remaining 11 (36.67%) were vegetarian.

Related to the mother's Body Mass Index in interventional group, majority of the subjects 27 (90%) were had 18.6 to 25.0 and remaining 3 (10%) were had 26.0 to 30.0. In control group, majority of the subjects 28 (93.33%) were had 18.6 to 25 and remaining 2 (6.67 %) were had between 26.0 to 30 BMI.

While discussing weeks of gestation in interventional group, majority of the subjects 12 (40%) were had 38 weeks, 10 (33.3%) were had 39 weeks, 7 (23.34%) were had 40 weeks and remaining 1 (3.33%) was 40 weeks. In control group, majority of the subjects 15 (50%) were had 38 weeks, 13 (43.33%) were had 39 weeks and remaining 2 (6.67%) were had 40 weeks of gestation.

Based on the weight of baby at birth in interventional group, majority of babies 16 (53.33%) were had between 2.5 to 3.0 kg, 13 (43.34%) were had between 3.1 to 3.5 kg and remaining 1 (3.33%) was between 3.6 to 4.0kg. In control group, majority of the babies 16 (53.33%) were had between 2.5 to 3.0 kg and remaining 14 (46.67%) were had between 3.1-4.0 kg.

In regard to the mode of delivery in interventional group, majority of the subjects 22(73.34%) were had normal vaginal delivery, 4 (13.33%) were had forceps delivery and remaining 4 (13.33%) of them had vacuum delivery. In control group,

majority of the subjects 21 (70%) were had normal vaginal delivery, 5 (16.67%) were had vaccum delivery and remaining 4 (13.3%) of them had forceps delivery.

While considering the length of episiotomy in interventional group, majority of the subjects 21 (70%) were had 3cms and remaining 9 (30%) were had 4cms. In control group, majority of the subjects 19 (63.3%) were had 3cms, 9 (30%) were had 4cmsand remaining 2 (6.67%) had 5cms of episiotomy length.

While mentioning the history of perineal infection none of them had the perineal infections both in interventional group and control group.

Distribution of subjects according to age

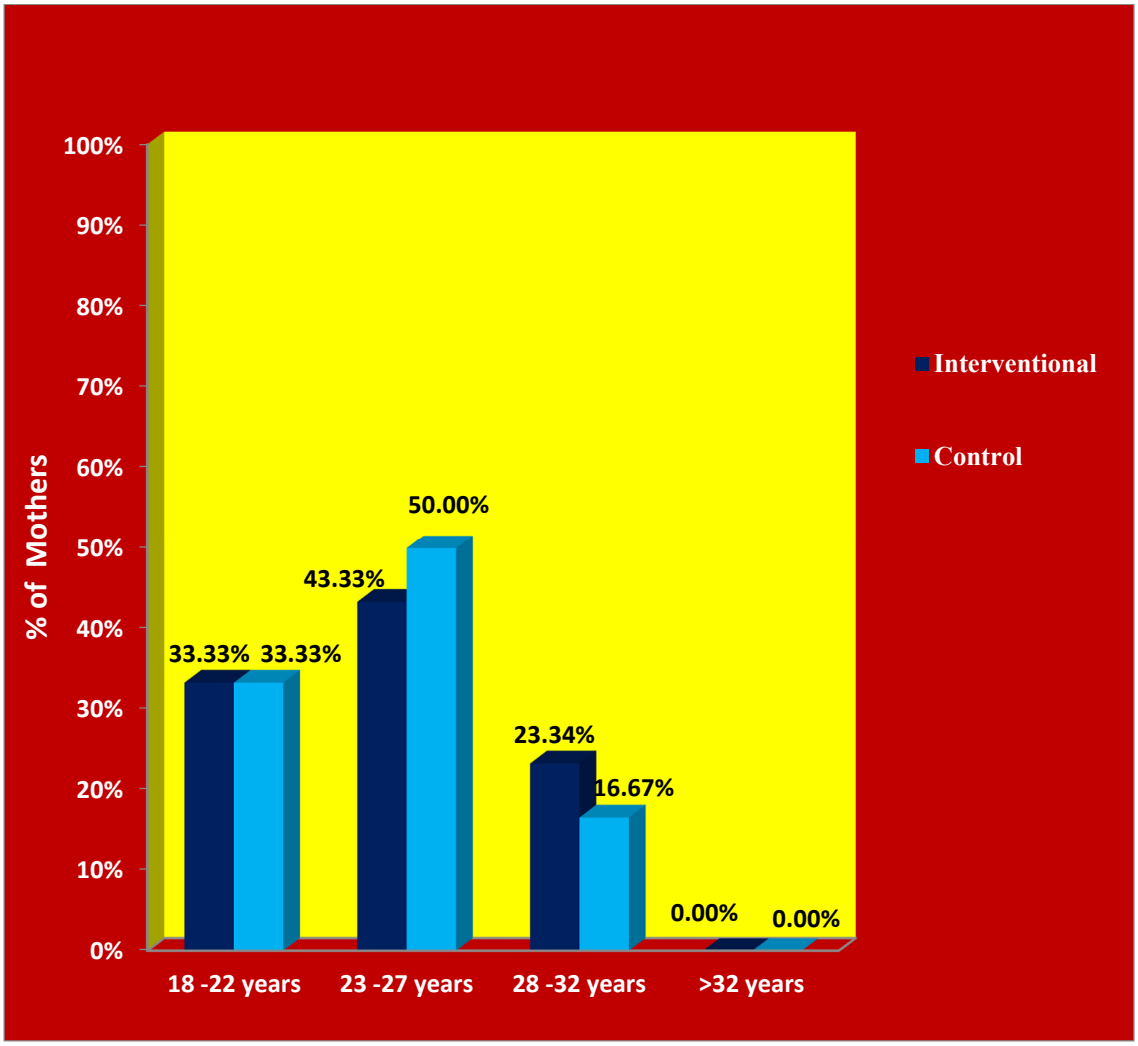


Figure 2: Bar diagram portrays the distribution of postnatal mothers according to their age.

In interventional group, majority of the subjects 13 (43.33%) belongs to the age group between 23-27 years, 10 (33.33%) belongs to the age group between 18-22 years and remaining 7 (23.34%) belongs to the age group between 28-32 years. In control group, majority of the subjects 15 (50%) belongs to the age group between 23-27 years, 10 (33.33%) belongs to the age group between 18-22 years and remaining 5 (16.67%) belongs to the age group between 28-32 years.

Distribution of subjects according to education

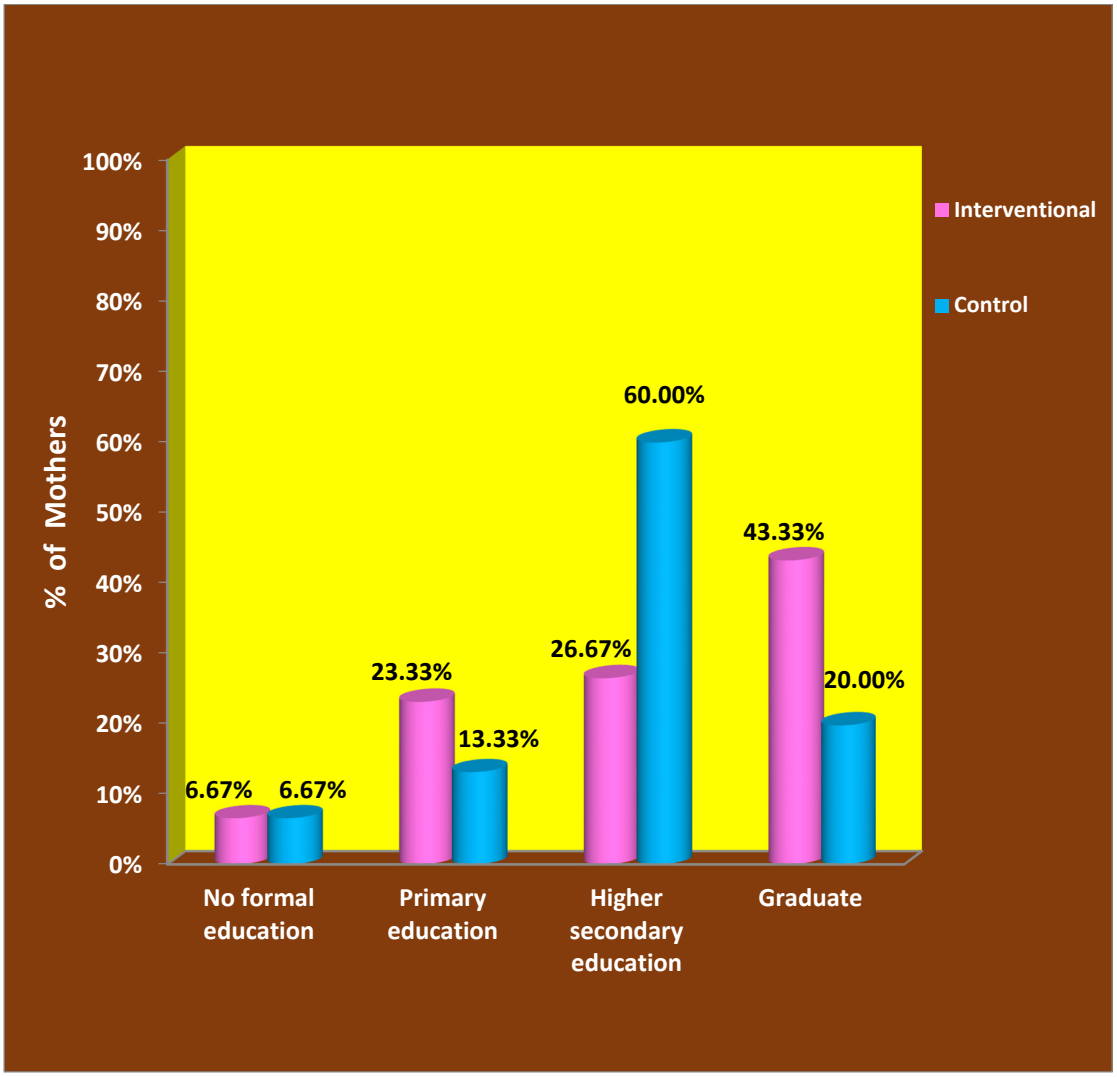


Figure 3: Cylindrical diagram portrays the distribution of postnatal mothers according to their education

In interventional group, majority of the subjects 13 (43.33%) studied up to graduate, 8 (26.67%) studied up to higher secondary education, 7 (23.33%) studied up to primary education, remaining 2 (6.67%) had no formal education. In control group majority of the subjects 18 (60%) studied up to higher secondary education , 6 (20%) studied up to graduate, 4 (13.33%) studied up to primary education and 2 (6.67%) had no formal education.

Distribution of subjects according to monthly income

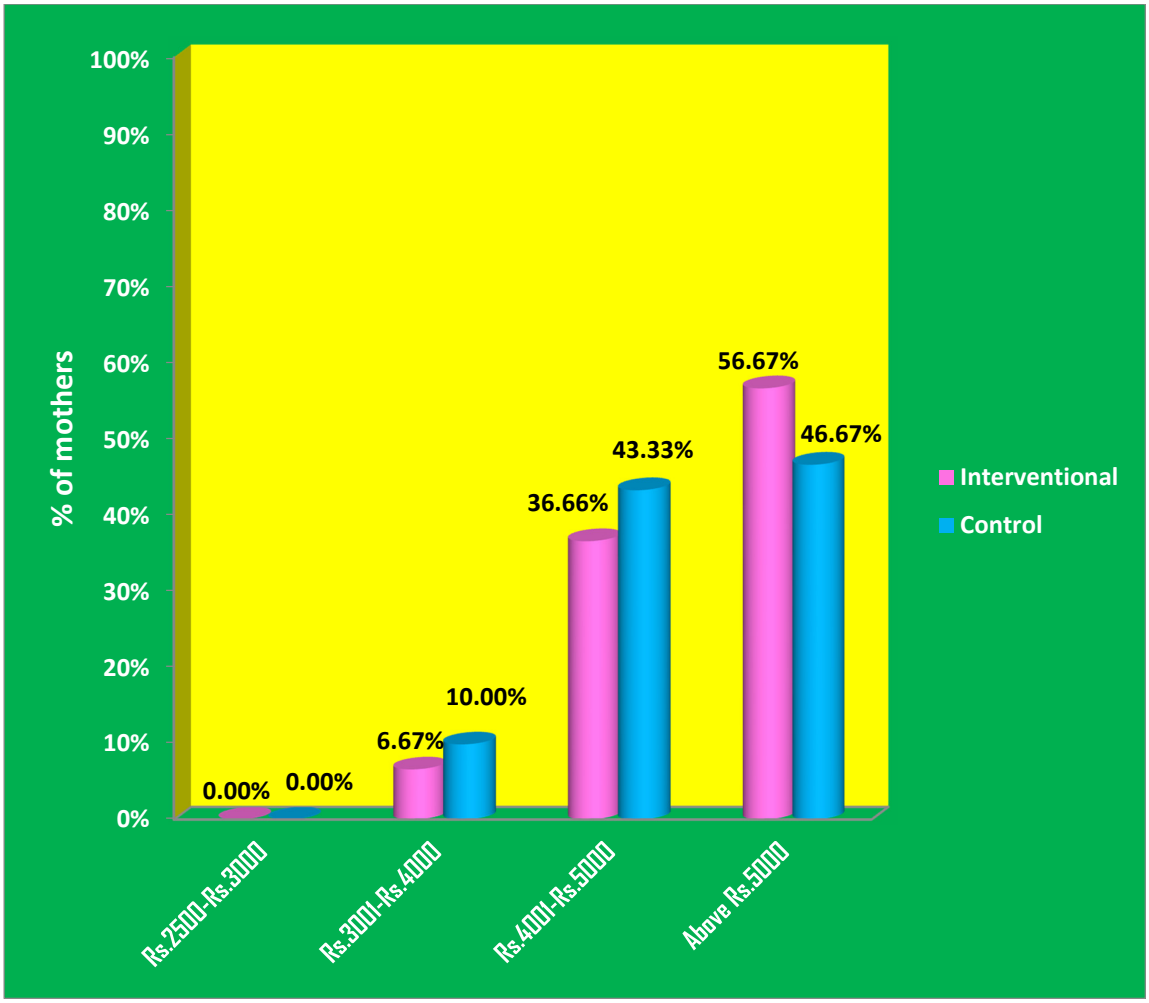


Figure 4: Cylindrical diagram portrays the distribution of postnatal mothers according to their monthly income

In interventional group, majority of the subjects 17 (56.67%) were earned more than Rs.5001, 11 (36.66%) were earned between Rs.4001-Rs.5000 and remaining 2 (6.67%) were earned between Rs.3001-Rs.4000. In control group, majority of the subjects 14 (46.67%) were earned more than Rs.5001, 13 (43.33%) were earned Rs.4001-5000 and remaining 3 (10%) were earned between Rs.3001-Rs.4000.

Distribution of subjects according to type of family

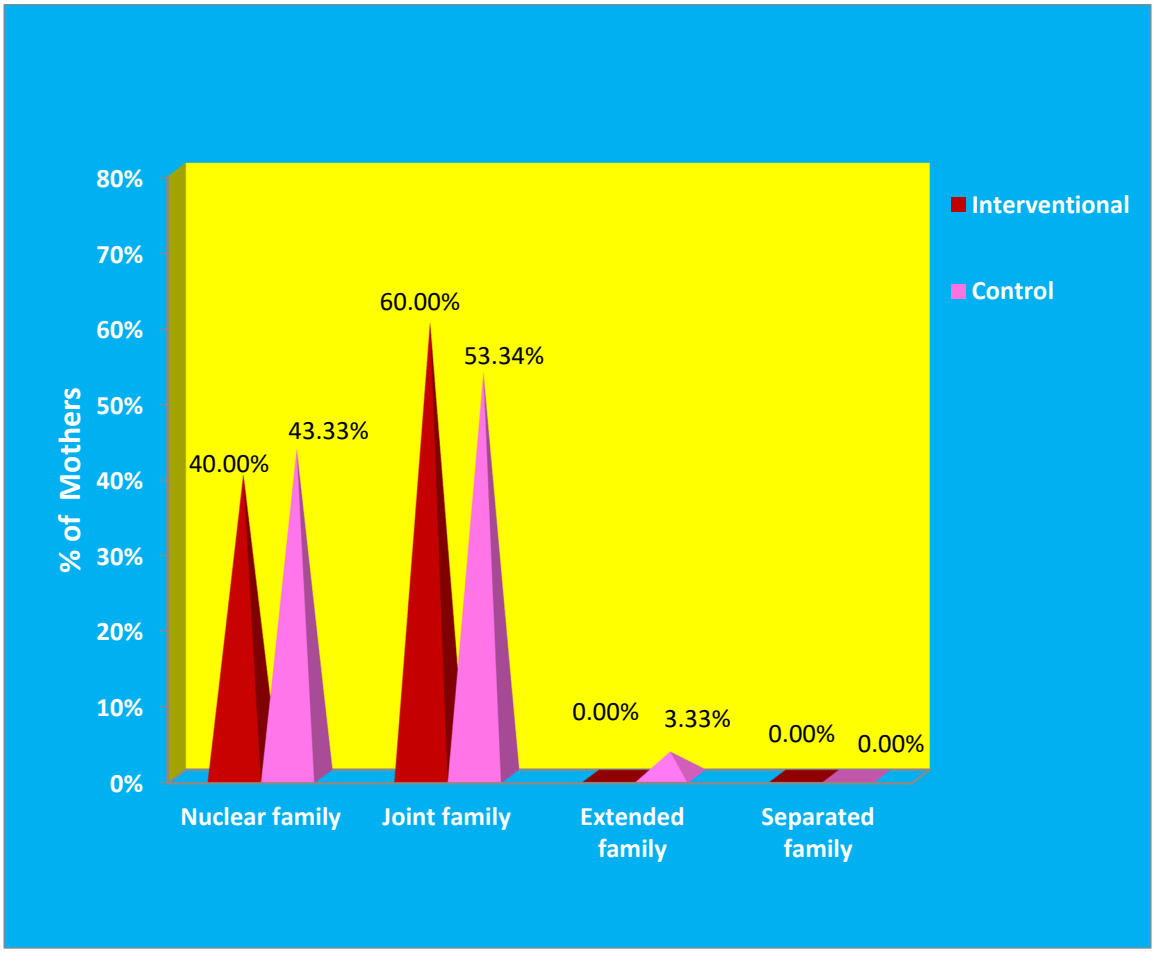


Figure 5: Cone diagram portrays the distribution of postnatal mothers according to their type of family

In interventional group, majority of the subjects 18 (60%) were joint family, 12 (40%) were nuclear family. In control group, majority of the subjects 16 (53.34%) were joint family, 13 (43.3%) were nuclear family and remaining 1 (3.33%) was extended family.

Distribution of subjects according to food habit

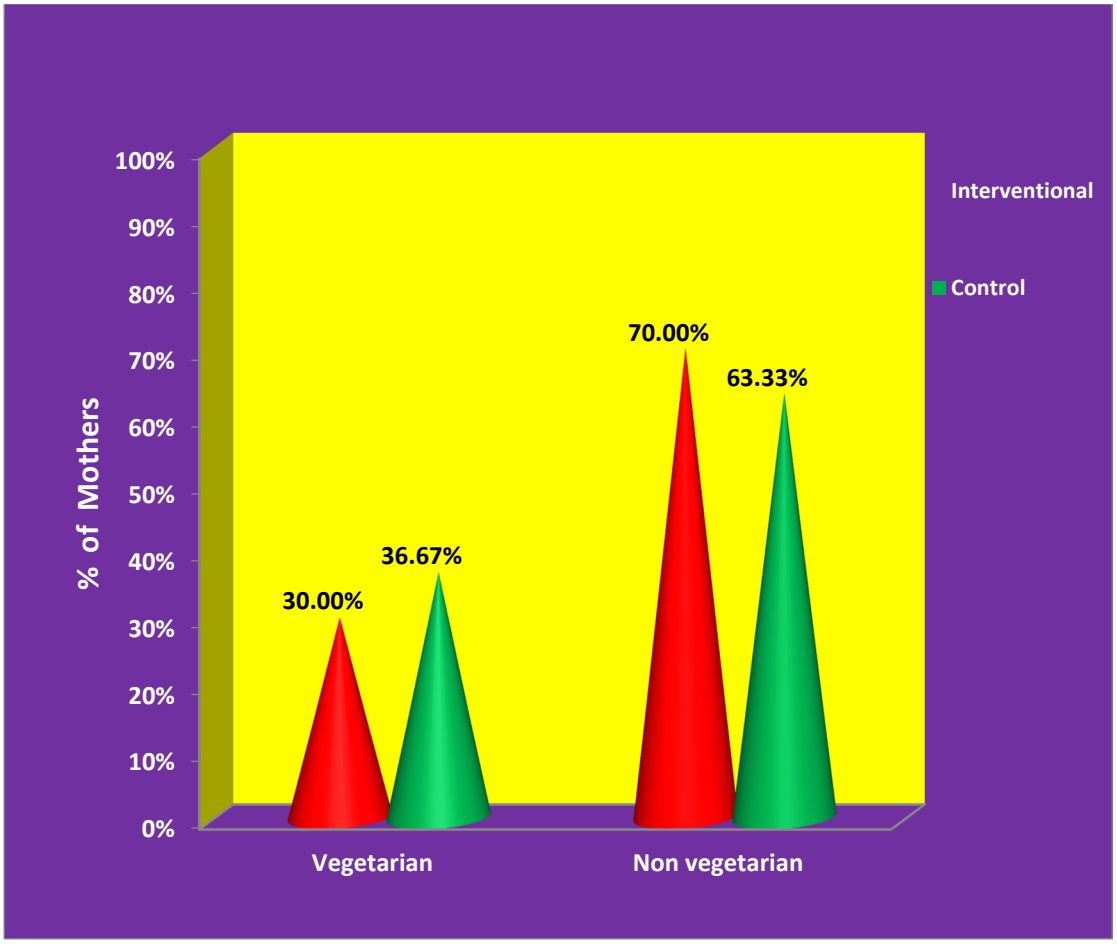


Figure 6: Cone diagram portrays the distribution of postnatal mothers according to their food habit.

Interventional group, majority of the subjects 21 (70%) were non-vegetarian and remaining 9 (30%) were vegetarian. In control group, majority the subjects 19 (63.33%) were non-vegetarian and remaining 11 (36.67%) were vegetarian.

Distribution of subjects according to mother's Body Mass Index

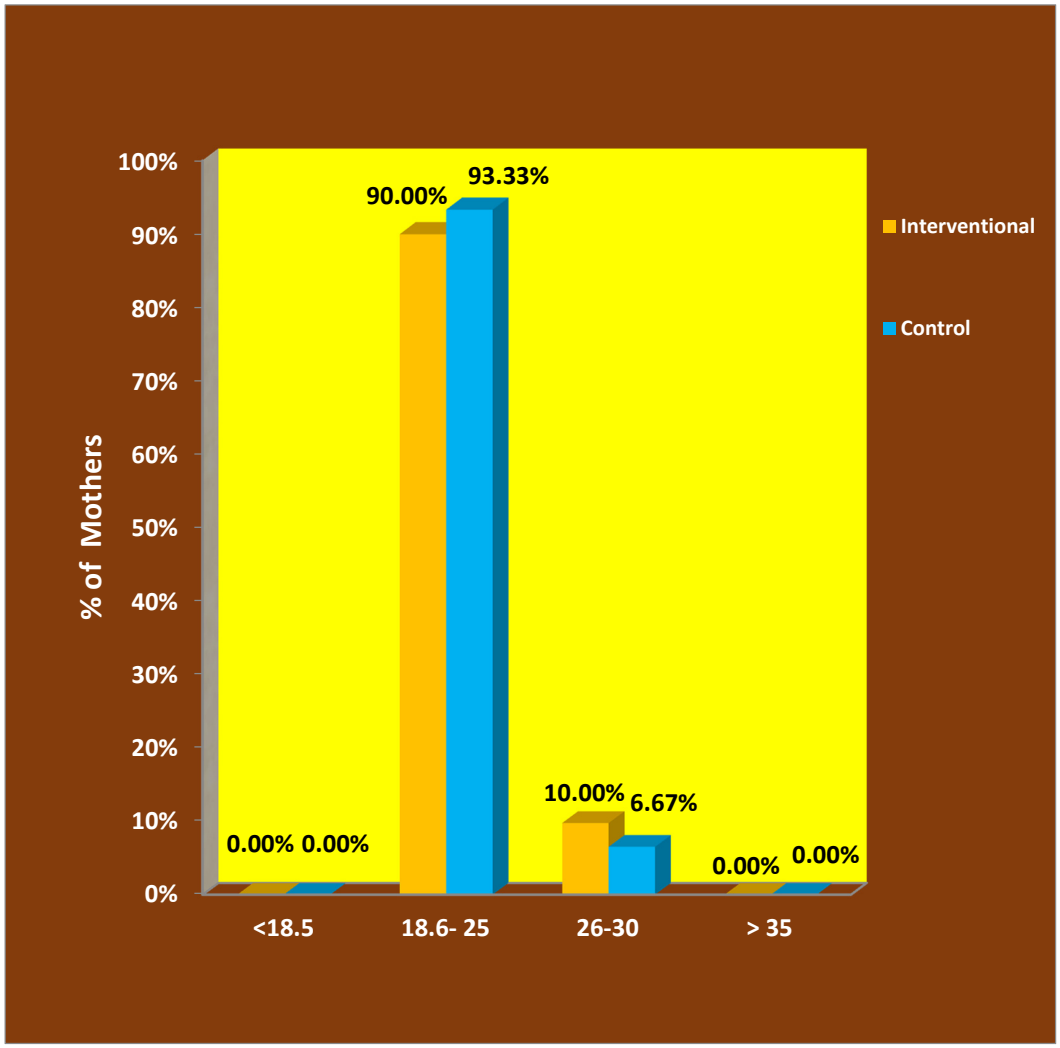


Figure 7: Multiple Bar diagram portrays the distribution of postnatal mothers according to their Body Mass Index.

In interventional group, majority of the subjects 27 (90%) were had 18.6 to 25.0 and remaining 3 (10%) were had 26.0 to 30.0. In control group, majority of the subjects 28 (93.33%) were had 18.6 to 25 and remaining 2 (6.67 %) were had between 26.0 to 30 BMI.

Distribution of subjects according to weeks of gestation

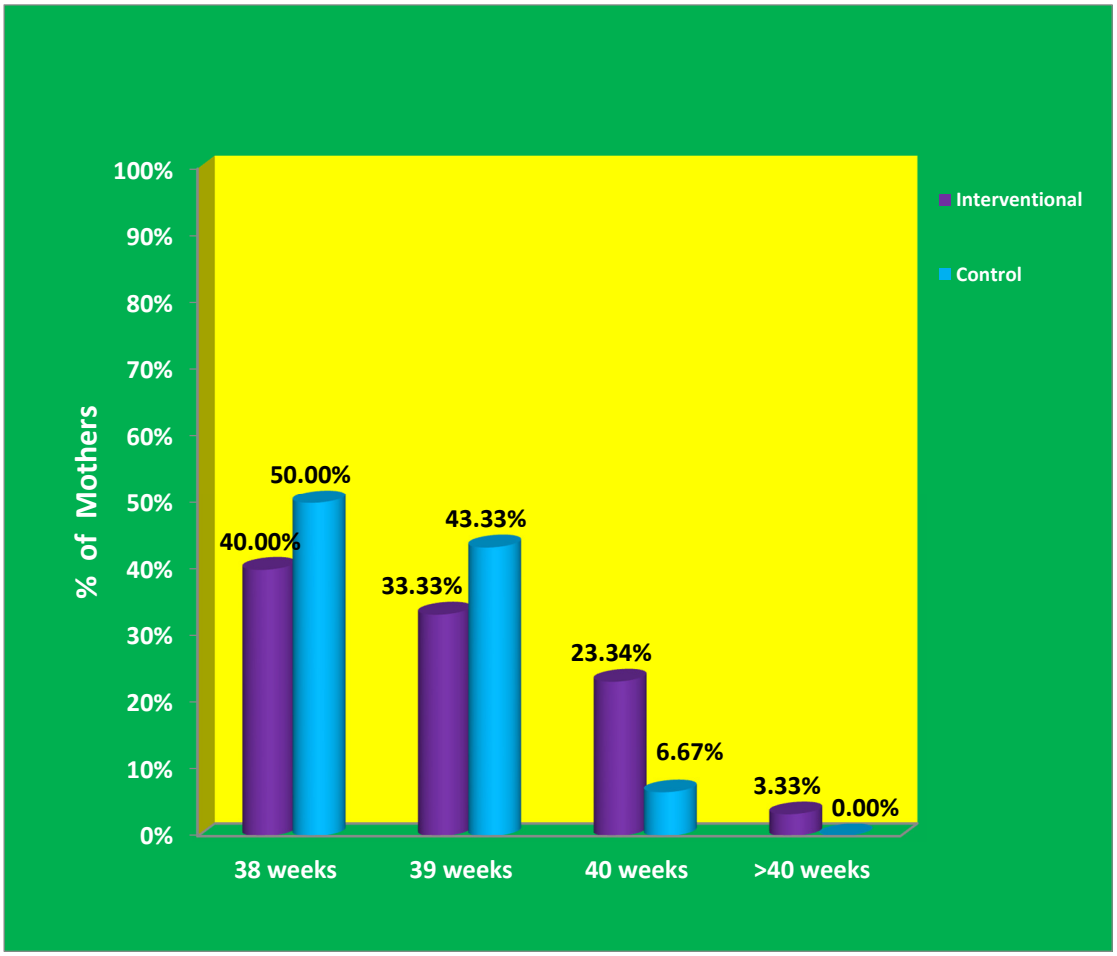


Figure 8: Cylindrical diagram portrays the distribution of postnatal mothers according to their weeks of gestation.

In interventional group, majority of the subjects 12 (40%) were had 38 weeks, 10 (33.3%) were had 39 weeks, 7 (23.34%) were had 40 weeks and remaining 1 (3.33%) was 40 weeks. In control group, majority of the subjects 15 (50%) were had 38 weeks, 13 (43.33%) were had 39 weeks and remaining 2 (6.67%) were had 40 weeks of gestation.

Distribution of subjects according to weight of baby at birth

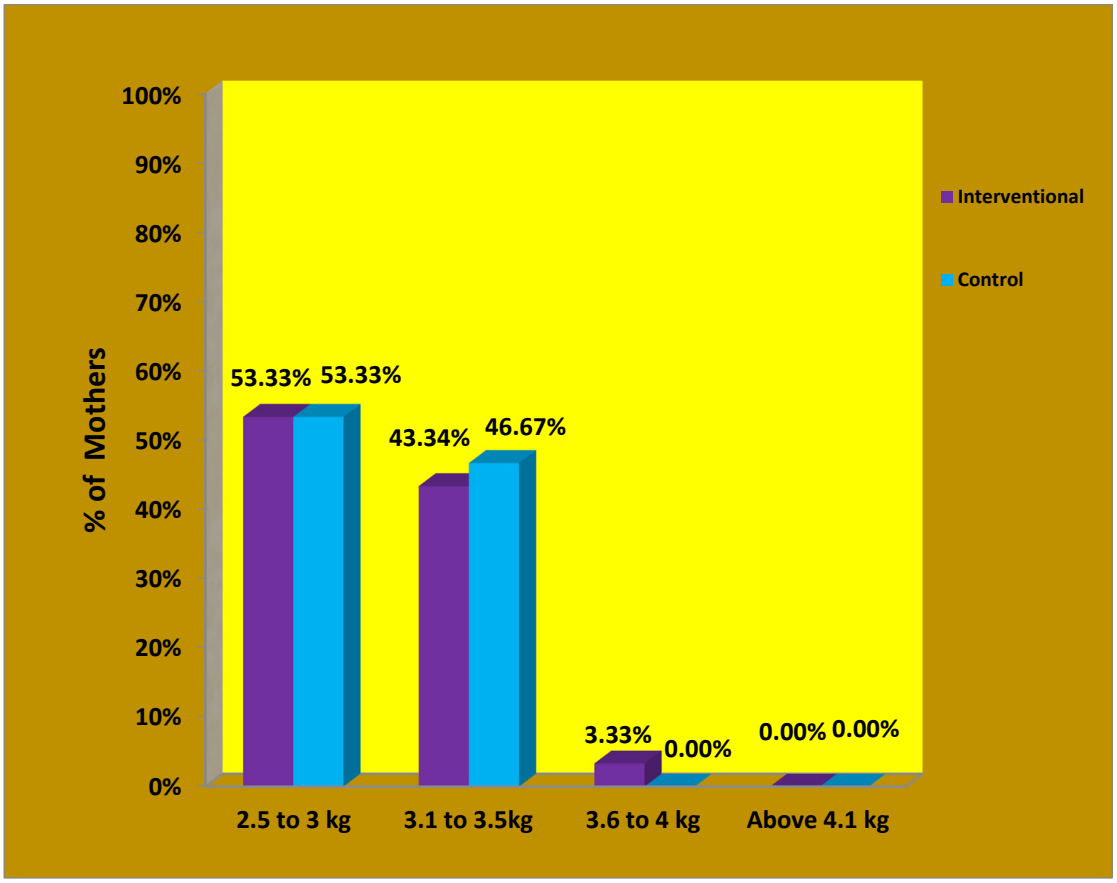


Figure 9: Multiple bar diagram portrays the distribution of postnatal mothers according to their weight of baby at birth

In interventional group, majority of babies 16 (53.33%) were had between 2.5 to 3.0 kg, 13 (43.34%) were had between 3.1 to 3.5 kg and remaining 1 (3.33%) was between 3.6 to 4.0 kg. In control group, majority of the babies 16 (53.33%) were had between 2.5 to 3.0 kg and remaining 14 (46.67%) were had between 3.1-4.0 kg.

Distribution of subjects according to mode of delivery

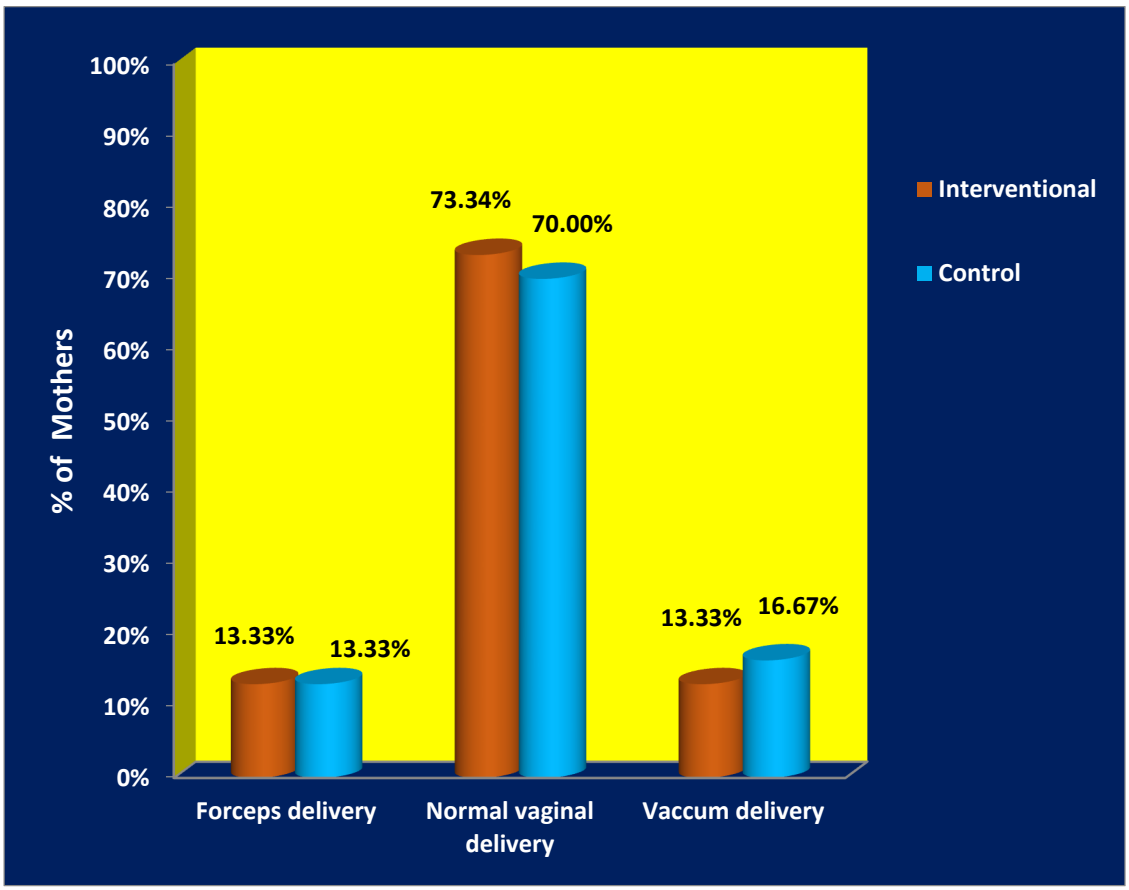


Figure 10: Cylindrical diagram portrays the distribution of postnatal mothers according to their mode of delivery.

In interventional group, majority of the subjects 22 (73.34%) were had normal vaginal delivery, 4 (13.33%) were had forceps delivery and remaining 4 (13.33%) of them had vaccum delivery. In control group, majority of the subjects 21 (70%) were had normal vaginal delivery, 5 (16.67%) were had vaccum delivery and remaining 4 (13.3%) of them had forceps delivery.

Distribution of subjects according to length of episiotomy

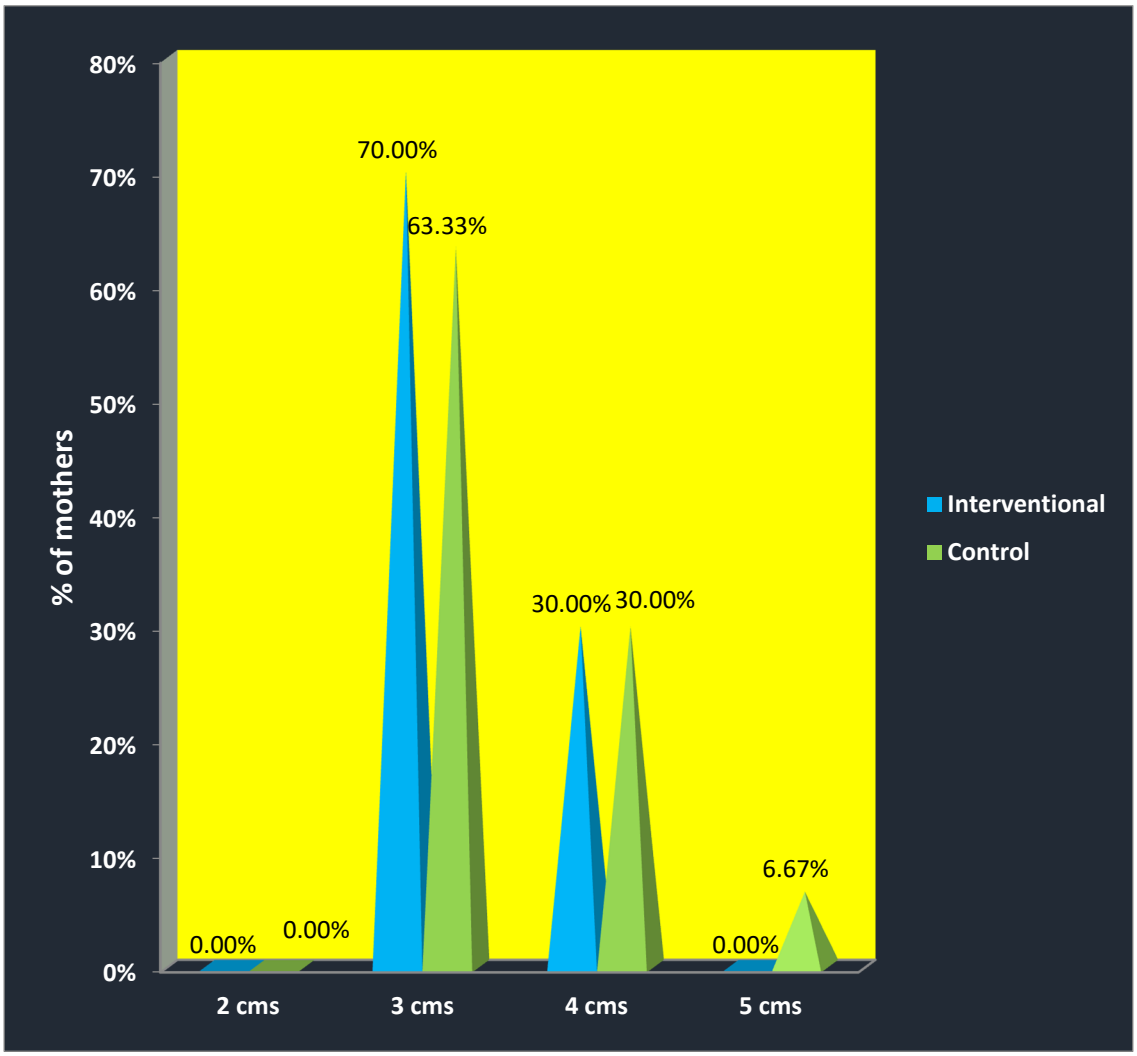


Figure 11: Cone diagram portrays the distribution of postnatal mothers according to their length of episiotomy

In interventional group, majority of the subjects 21 (70%) were had 3cms and remaining 9 (30%) were had 4 cms. In control group, majority of the subjects 19 (63.3%) were had 3cms, 9 (30%) were had 4cms and remaining 2 (6.67%) had 5 cms of episiotomy length.

Distribution of subjects according to history of perineal infection

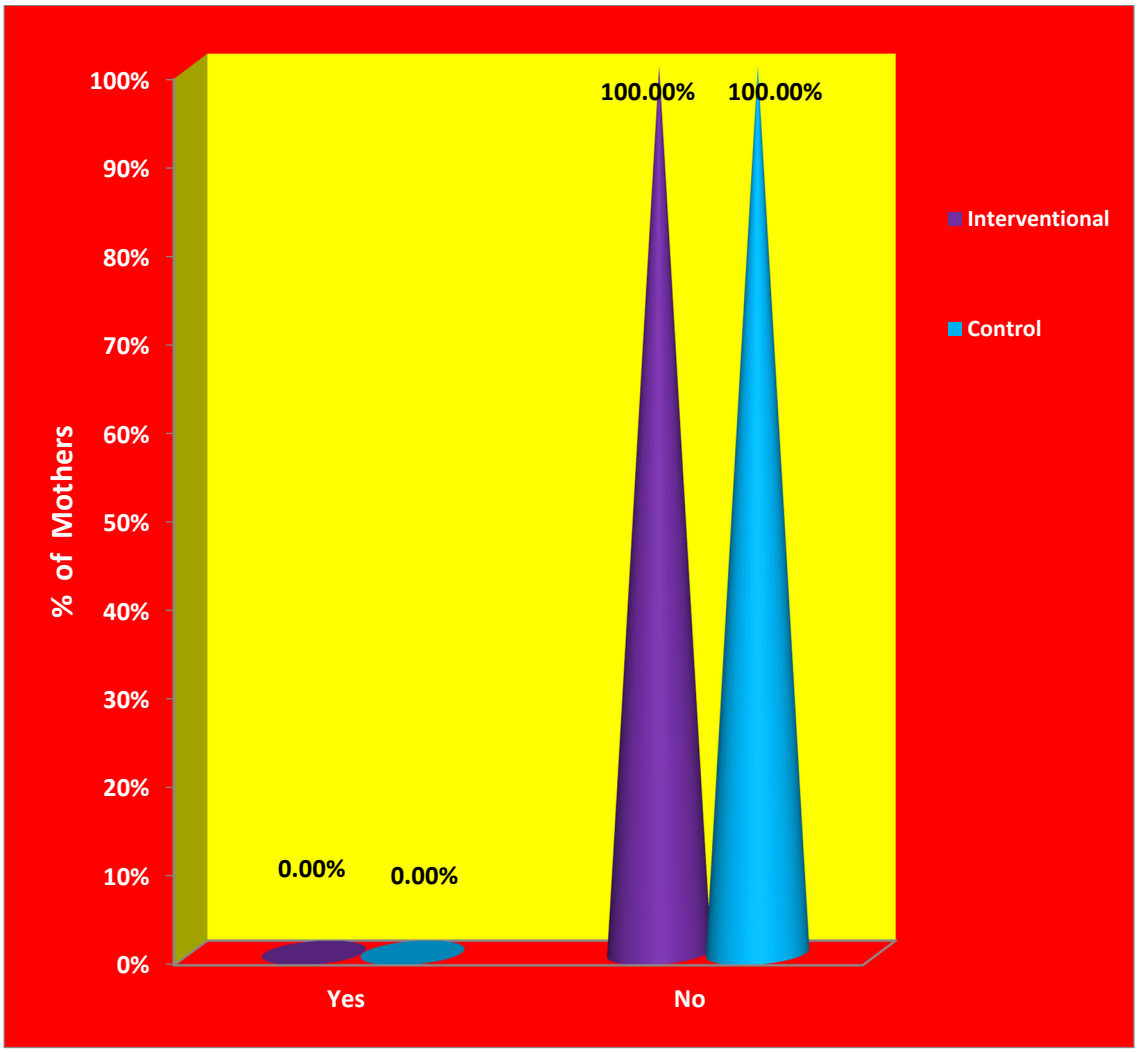


Figure 12: Cone diagram portrays the distribution of postnatal mothers according to their history of perineal infection.

The above cone diagram shows that none of them had the perineal infections both in interventional group and control group.

Section -II

Description of pre test and post test level on episiotomy wound healing among post natal mothers in interventional and control group.

Table - 2

Frequency and Percentage distribution of subjects according to their pre test level on episiotomy wound healing.

n=60

Level of Episiotomy Wound Healing	Interventional Group		Control Group		χ^2
	Pre test		Pre test		
	f	%	f	%	
Good	0	0%	0	0%	$\chi 2$=0.21 p=0.64 (NS)
Average	27	90.0%	28	93.33%	
Poor	3	10.00%	2	6.67%	
Total	30	100	30	100	

***Significant at P≤0.05,**Highly significant at P≤0.01, *** Very high significant at P≤ 0.001**

The above table 2 portrays distribution of subjects according to their pre test level on episiotomy wound healing.

In interventional group, majority of the subjects 27 (90%)had average wound healing, remaining 3 (10%)had poor wound healing and none of them had good wound healing. In control group,28 (93.33%) had average wound healing, remaining 2 (6.67%) had poor wound healing, and none of them had good wound healing.

Table: 3 Pre test Mean, Standard deviation and Mean difference of Episiotomy wound Healing among Interventional and control group

n=60

Group	Mean	SD	Mean Difference	Student 't'-test
Interventional	7.50	0.78	0.23	t = 0.98 P = 0.33 (NS)
Control	7.73	1.05		

***Significant at P ≤0.05,**Highly significant at P ≤0.01, *** Very high significant at P ≤ 0.001**

The above table 3 reveals the pre test mean score on episiotomy wound healing among interventional and control group.

In the Pre test, the mean score was 7.50 with standard deviation was0.78 in the interventional group. Whereas in control group the pre test mean score was 7.73 with standard deviation 1.05and the mean difference was 0.23.

The student 't' test was done to find out the difference between the interventional group and control group. The student 't' test 0.98 was less than table value which was not significant.

Table: 4 Frequency and percentage distribution of subjects according to their post test level on episiotomy wound healing

n=60

Level of episiotomy wound healing	Interventional group		Control group		χ^2
	Post test		Post test		
	f	%	f	%	
Good	21	70.00%	4	13.33%	**χ^2=20.08 P=0.001*** (S)**
Average	9	30.00%	25	83.34%	
Poor	0	0%	1	3.33%	
Total	30	100	30	100	

***significant at P≤0.05 **, highly significant at P≤0.01 ***, very high significant at P≤0.001.**

The above table 4 portrays the distribution of subjects according to their post test level on episiotomy wound healing

In interventional group, majority of the subjects 21 (70%)had good wound healing, remaining 9 (30%)had average wound healing and none of them had poor wound healing. In control group, 25 (83.34%) had average wound healing 4 (13.33%) had good wound healing and remaining 1(3.33%) had poor wound healing.

Table:5 Post test mean, standard deviation and mean difference on episiotomy wound healing among Interventional and Control group

n=60

Group	Mean	SD	Mean Difference	Student 't'-test
Intervention	3.80	1.67	3.33	**t = 8.82** **P = 0.001*** (S)**
Control	7.13	1.22		

***significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001**

The above table 5 reveals the comparison of post test mean score on episiotomy wound healing among interventional and control group.

In interventional group, the post test mean score was 3.80 with standard deviation was 1.67. In control group, the post test mean score was 7.13 with standard deviation was 1.22 and the mean difference 3.33.

The student 't' test was done to find out the difference between the interventional group and control group. The student 't' test value 8.82was greater than table value which was significant at 0.001 level.

Section –III

Effectiveness of sodium chloride application on episiotomy wound healing among post natal mothers

Table-6

Distribution of subjects according to their Pre test and post test level on episiotomy wound healing

n=60

Group	Maximum REEDA score	Pretest		Posttest		Mean Percentage difference
		Mean Score	%	Mean Score	%	
Interventional	15	7.50	50.0%	3.80	25.3%	24.7%
Control	15	7.73	51.5%	7.13	47.5%	4.0%

The above table 6 portrays the distribution of subjects according to their pre test and post test level on episiotomy wound healing

Considering the pretest, in interventional group the mean score was 7.50 (50.0%) and in post test the mean score 3.80 (25.3%). The difference was 24.7. Whereas in control group, the pre test mean score was 7.73 (51.5%) and in post test the mean score was 7.13 (47.5%). The difference was 4 %.

On an average episiotomy wound healing among post natal mothers in control group was increased in 24.7% than control group.

This difference shows the effectiveness of sodium chloride application on episiotomy wound healing.

Effectiveness of sodium chloride application on episiotomy wound healing

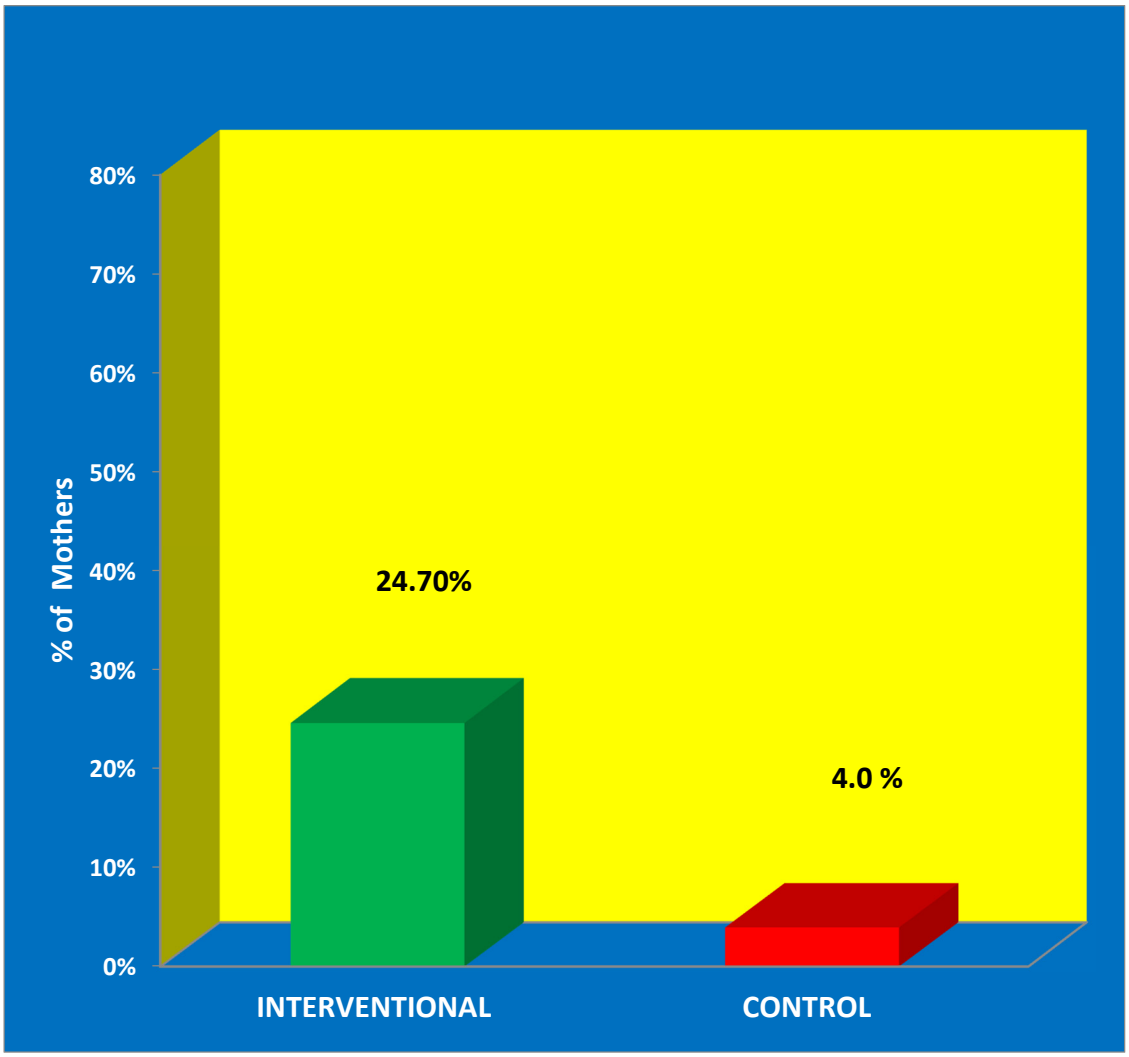


Figure:13 Bar diagram portrays that effectiveness of sodium chloride application on episiotomy wound healing

The above bar diagram shows that the mean difference 24.7% in interventional group and mean difference 4.0 % in control group. This difference shows the effectiveness of sodium chloride application on episiotomy wound healing.

Section-IV

Comparison of pre test and post test level of episiotomy wound healing among post natal mothers in Interventional group and Control group

Table - 7

Distribution of subjects according to their level of episiotomy wound healing

n=60

Group	Level	Episiotomy Wound healing				Extended McNemar's test
		Pre test (n=30)		Post test (n=30)		
		f	%	f	%	
Interventional	Poor	3	10.00%	0	0.00%	**χ2=23.00P=0.001 ***(S)**
	Average	27	90.00%	9	30.00%	
	Good	0	0.00%	21	70.00%	
Control	Poor	2	6.67%	1	3.33%	χ2=5.45 P=0.06(NS)
	Average	28	93.33%	25	83.33%	
	Good	0	0.00%	4	13.33%	

***Significant at P ≤0.05 **, Highly significant at P ≤0.01 ***, Very high significant at P ≤0.001**

The above table 7 portrays distribution of subjects according to their level of episiotomy wound healing.

Pre test level of episiotomy wound healing in interventional group, majority 27 (90%) were had average level of wound healing, 3 (10 %) were had poor level of wound healing and none of them had good wound healing. Whereas in the post test majority 21 (70%) had good wound healing and remaining 9 (30%) were had average wound healing and none of them had poor wound healing.

Pre test level of episiotomy wound healing in control group, majority 28 (93.33%) were had average level of wound healing, 2 (6. 67%) were had good level of wound healing and none of them had good wound healing. Where as in the post test majority 25 (83.33%) had average wound healing 4 (13.33%) were had average wound healing and 1 (3.33%) had poor wound healing. Extended McNemar's test was done to find out the significant difference between pre test and post test level on episiotomy wound healing among interventional and control group.χ2= 23.00 which was greater than table value at 0.001 level.

Comparison of Pre test and post test level on episiotomy wound healing among interventional and control group

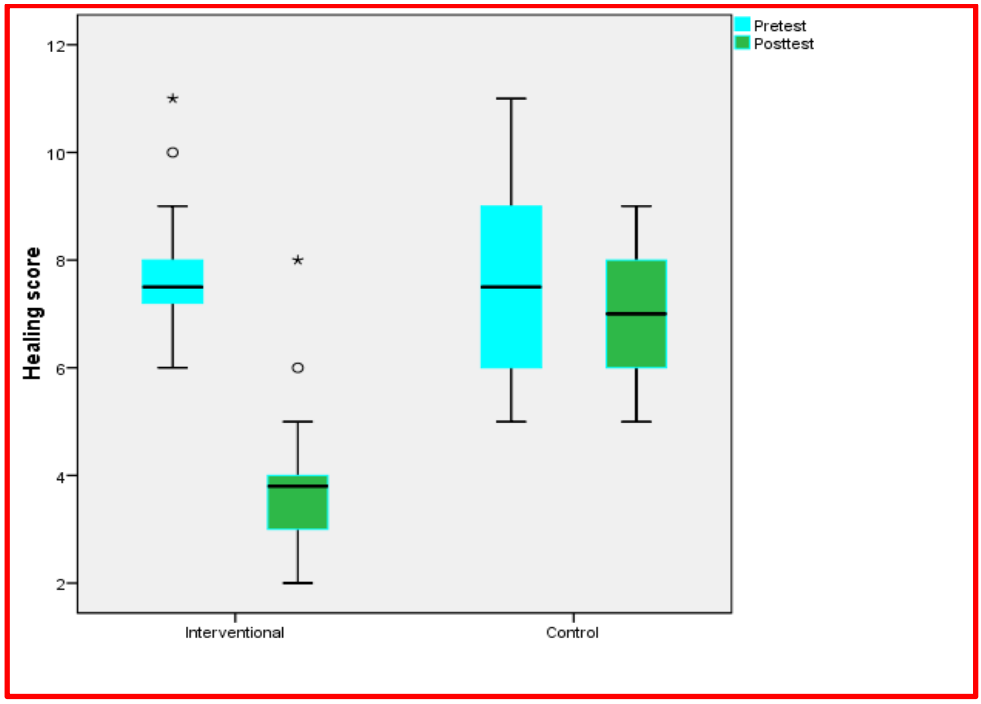


Figure 14: Box –plot diagram shows the comparison of pre test and post test level on episiotomy wound healing.

Pre test level of episiotomy wound healing in interventional group, majority 27 (90%) were had average level of wound healing, 3 (10 %) were had poor level of wound healing and none of them had good wound healing. Where as in the post test majority 21 (70%) had good wound healing and remaining 9 (30%) were had average wound healing and none of them had poor wound healing.

Pre test level of episiotomy wound healing in control group, majority 28 (93.33%) were had average level of wound healing, 2 (6. 67%) were had poor level of wound healing and none of them had good wound healing. Whereas in the post test ,majority 25 (83.33%) had average wound healing 4 (13.33%) were had good wound healing and 1 (3.33%) had poor wound healing.

Extended McNemar's test was done to find out the significant difference between pre test and post test level on episiotomy wound healing among interventional and control group. $\chi 2$= 23.00 which was greater than table value at 0.001 level.

Table: 8 Comparison of subjects according to their pre test and post test mean score among interventional and control group

n=60

Group		N	Mean	SD	Mean difference	Paired t-test
Interventional	Pretest	30	7.50	0.78	3.70	**t=11.74 P=0.001***(S)**
	Posttest	30	3.80	1.67		
Control	Pretest	30	7.73	1.05	0.60	t=1.92 P=0.06(NS)
	Posttest	30	7.13	1.22		

***significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001**

The above table 8reveals the comparison of subjects according to their pre test and post test mean score among interventional and control group.

In interventional group, the pre test mean score 7.50 with standard deviation 0.78 and the mean difference 3.70. The paired 't' test was done to find out the difference between pre test and post test level of wound healing among interventional group. The calculated 't' value 11.74 which was greater than table value at 0.001 level.

Section-V

Association between episiotomy wound healing among post natal mothers in interventional and control group with their socio demographic and obstetrical variables

Table- 9

Association between the post test level of episiotomy wound healing among interventional group with their socio demographic and obstetrical variables

n=30

Socio demographic variables		**Level of episiotomy wound healing**						**n**	**χ^2**
		Good		**Average**		**Poor**			
		f	**%**	**f**	**%**	**f**	**%**		
Age	18 -22 years	9	90.0%	1	10.0%	0	0.0%	10	**χ2=7.92 P=0.02* (S)**
	23 -27 years	10	76.9%	3	23.1%	0	0.0%	13	
	28 -32 years	2	28.5%	5	71.4%	0	0.0%	7	
	>32 years	0	0.0%	0	0.0%	0	0.0%	0	
Education	No formal education	0	0.0%	2	100.0%	0	0.0%	2	χ2=5.06 P=0.16 (NS)
	Primary education	5	71.4%	2	28.6%	0	0.0%	7	
	Higher secondary education	6	75.0%	2	25.0%	0	0.0%	8	
	Graduate	10	76.9%	3	23.1%	0	0.0%	13	
Occupation	House wife	9	60.0%	6	40.0%	0	0.0%	15	χ2=1.63 P=0.44 (NS)
	Coolie	0	0.0%	0	0.0%	0	0.0%	0	
	Private employee	6	85.7%	1	14.3%	0	0.0%	7	
	Government employee	6	75.0%	2	25.0%	0	0.0%	8	

Monthly income	Rs.2500-Rs.3000	0	0.0%	0	0.0%	0	0.0%	0	χ2=5.04 P=0.48 (NS)
	Rs.3001-Rs.4000	0	0.0%	2	100.0%	0	0.0%	2	
	Rs.4001-Rs.5000	8	72.7%	3	27.3%	0	0.0%	11	
	Above Rs.5000	13	76.5%	4	23.5%	0	0.0%	17	
Type of family	Nuclear family	9	75.0%	3	25.0%	0	0.0%	12	χ2=0.23 P=0.62 (NS)
	Joint family	12	66.7%	6	33.3%	0	0.0%	18	
	Extended family	0	0.0%	0	0.0%	0	0.0%	0	
	Separated family	0	0.0%	0	0.0%	0	0.0%	0	
Food habit	Vegetarian	9	100.0%	0	0.0%	0	0.0%	9	**χ2=5.51 P=0.02* (S)**
	Non vegetarian	12	57.1%	9	42.9%	0	0.0%	21	
Obstetrical variables									
Mother's BMI	<18.5	0	0.0%	0	0.0%	0	0.0%	0	**χ2=7.77P =0.01** (S)**
	18.6- 25	21	77.8%	6	22.2%	0	0.0%	27	
	26-30	0	0.0%	3	100.0%	0	0.0%	3	
	> 35	0	0.0%	0	0.0%	0	0.0%	0	
Weeks of gestation	38 weeks	8	66.7%	4	33.3%	0	0.0%	12	χ2=4.85 P=0.18 (NS)
	39 weeks	9	90.0%	1	10.0%	0	0.0%	10	
	40 weeks	3	42.9%	4	57.1%	0	0.0%	7	
	>40 weeks	1	100.0%	0	0.0%	0	0.0%	1	
Weight of baby at birth	2.5 to 3 kg	11	68.8%	5	31.3%	0	0.0%	16	χ2=2.64 P=0.26 (NS)
	3.1 to 3.5kg	10	76.9%	3	23.1%	0	0.0%	13	
	3.6 to 4 kg	0	0.0%	1	100.0%	0	0.0%	1	
	Above 4.1 kg	0	0.0%	0	0.0%	0	0.0%	0	

Mode of delivery	Forceps delivery	1	25.0%	3	75.0%	0	0.0%	4	**χ2=6.08P =0.04* (S)**
	Normal vaginal delivery	17	77.3%	5	22.7%	0	0.0%	22	
	Vaccum delivery	2	50.0%	2	50.0%	0	0.0%	4	
Length of episiotomy	2 cms	0	0.0%	0	0.0%	0	0.0%	0	**χ2=3.99P =0.04* (S)**
	3 cms	17	81.0%	4	19.0%	0	0.0%	21	
	4 cms	4	44.4%	5	55.6%	0	0.0%	9	
	5 cms	0	0.0%	0	0.0%	0	0.0%	0	
History of perineal infections	Yes	0	0.0%	0	0.0%	0	0.0%	0	χ2=0.00P =1.00(NS)
	No	21	70.0%	9	30.0%	0	0.0%	30	

***significant at P≤0.05, **highly significant at P≤0.01, ***very high significant at P≤0.001.**

The above table 9 shows the association between the post test level of episiotomy wound healing among interventional group with their socio demographic and obstetrical variables. Chi square test reveals that there was a significant association between episiotomy wound healing and **age** (χ2=7.92) (P=0.02), **food habit** (χ2=5.51) (P=0.02), **Body Mass Index** (χ2=7.77) (P=0.01), **mode of delivery** (χ2= 6.08) (P=0.04) and **length of episiotomy** (χ2=3.99) (P=0.04). That is mothers aged between 23- 27 years, prepared vegetarian diet with 18.6-25 BMI and had normal vaginal delivery by 3 cm length of episiotomy. Other variables were not statistically associated with the level of episiotomy wound healing.

Table: 10 Association between the post test level of episiotomy wound healing among control group with their socio demographic and obstetrical variables

n= 30

Socio demographic variables		Level of episiotomy wound healing						n	χ^2
		Good		Average		Poor			
		f	%	f	%	f	%		
Age	18 -22 years	2	20.0%	8	80.0%	0	0.0%	10	χ2=2.04P =0.72 (NS)
	23 -27 years	1	6.7%	13	86.7%	1	6.7%	15	
	28 -32 years	1	20.0%	4	80.0%	0	0.0%	5	
	>32 years	0	0.0%	0	0.0%	0	0.0%	0	
Education	No formal education	1	50.0%	1	50.0%	0	0.0%	2	χ2=10.50 P=0.11 (NS)
	Primary education	0	0.0%	3	75.0%	1	25.0%	4	
	Higher secondary education	3	16.7%	15	83.3%	0	0.0%	18	
	Graduate	0	0.0%	6	100.0%	0	0.0%	6	
Occupation	House wife	2	10.5%	16	84.2%	1	5.3%	19	χ2=0.90 P=0.92(NS)
	Coolie	0	0.0%	0	0.0%	0	0.0%	0	
	Private employee	1	16.7%	5	83.3%	0	0.0%	6	
	Government employee	1	20.0%	4	80.0%	0	0.0%	5	

Monthly income	Rs.2500-Rs.3000	0	0.0%	0	0.0%	0	0.0%	0	χ2=1.93 P=0.74 (NS)
	Rs.3001-Rs.4000	0	0.0%	3	100.0%	0	0.0%	3	
	Rs.4001-Rs.5000	2	15.4%	10	76.9%	1	7.7%	13	
	Above Rs.5000	2	14.3%	12	85.7%	0	0.0%	14	
Type of family	Nuclear family	2	15.4%	10	76.9%	1	7.7%	13	χ2=1.62P =0.80(NS)
	Joint family	2	12.5%	14	87.5%	0	0.0%	16	
	Extended family	0	0.0%	1	100.0%	0	0.0%	1	
	Separated family	0	0.0%	0	0.0%	0	0.0%	0	
Food habit	Vegetarian	0	0.0%	11	100.0%	0	0.0%	11	χ2=3.47P =0.17(NS)
	Non vegetarian	4	21.1%	14	73.7%	1	5.3%	19	
Obstetrical variables									
Mother's BMI	<18.5	0	0.0%	0	0.0%	0	0.0%	0	χ2=2.51p =0.28(NS)
	18.6- 25	3	10.7%	24	85.7%	1	3.6%	28	
	26-30	1	50.0%	1	50.0%	0	0.0%	2	
	> 35	0	0.0%	0	0.0%	0	0.0%	0	
Weeks of gestation	38 weeks	2	13.3%	12	80.0%	1	6.7%	15	χ2=3.73P =0.44(NS)
	39 weeks	1	7.7%	12	92.3%	0	0.0%	13	
	40 weeks	1	50.0%	1	50.0%	0	0.0%	2	
	>40 weeks	0	0.0%	0	0.0%	0	0.0%	0	
Weight of baby at birth	2.5 to 3 kg	2	12.5%	13	81.3%	1	6.3%	16	χ2=0.91 P=0.63(NS)
	3.1 to 3.5kg	2	14.3%	12	85.7%	0	0.0%	14	
	3.6 to 4 kg	0	0.0%	0	0.0%	0	0.0%	0	
	Above 4.1 kg	0	0.0%	0	0.0%	0	0.0%	0	

Mode of delivery	Forceps delivery	1	25.0%	2	50.0%	1	25.0%	4	$\chi 2$=8.300 P=0.08(NS)
	Normal vaginal delivery	3	14.3%	18	85.7%	0	0.0%	21	
	Vaccum delivery	0	0.0%	5	100.0%	0	0.0%	5	
Length of episiotomy	2 cms	0	50.0%	0	50.0%	0	0.0%	0	$\chi 2$=5.93P =0.20(NS)
	3 cms	3	15.8%	16	84.2%	0	0.0%	19	
	4 cms	0	0.0%	8	88.9%	1	11.1%	9	
	5 cms	1	0.0%	1	50.0%	0	0.0%	2	
History of perineal infections	Yes	0	0.0%	0	0.0%	0	0.0%	0	$\chi 2$=0.00P =1.00(NS)
	No	4	13.3%	25	83.3%	1	3.3%	30	

significant at P≤0.05 **, highly significant at P≤0.01 * ,very high significant at P≤0.001.**

The above table10 shows the Association between the post test level of episiotomy wound healing among control group with their socio demographic and obstetrical variables. Chi square test reveals that, there was no significant association between post test level of wound healing with their socio demographic and obstetrical variables in control group.

Discussion

CHAPTER-V

DISCUSSION

This chapter deals to find meaningful answers to research questions, the collected data must be processed, analyzed in an order and coherent fashion, so that patterns and relationship can be discussed.

Based on the objectives of the study and hypotheses, this chapter deals with the detailed discussion of the results of the data interpreted from the statistical analysis. The purpose of the study was to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers at Government Rajaji Hospital, Madurai. 60 samples were selected by simple random sampling technique .The level of episiotomy wound healing were assessed with REEDA scale.

The objectives of the study were

1. To assess the episiotomy wound healing among postnatal mothers in interventional and control group at Government Rajaji Hospital Madurai.
2. To evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.
3. To associate the episiotomy wound healing among postnatal mothers both interventional group and control group with their socio demographic and obstetrical variables.

The following hypotheses were set for the study

All the hypotheses were testedat0.05 level of significance

H_1: There is a significant difference between pre testand post test episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.

H_2:There is a significant difference between post test episiotomy wound healing among postnatal mothers both in interventional and control group at Government Rajaji Hospital Madurai.

H_3: There is a significant association between the episiotomy wound healing among postnatal mothers both interventional and control group with their socio demographic and obstetrical variables.

The findings of the study were discussed under the following headings

- Distribution of socio demographic and obstetrical variables among post natal mothers in interventional and control group
- Description of pre test and post test level on episiotomy wound healing among post natal mothers in interventional and control Group.
- Effectiveness of sodium chloride application on episiotomy wound healing among post natal mothers
- Comparison of pre test and post test level of episiotomy wound healing among post natal mothers in interventional and control group
- Association between episiotomy wound healing with their socio demographic and obstetrical variables among post natal mothers in interventional and control group

According to WHO, the number of normal delivery rate being very high 30% per 1000 births. The risk of perineal infections ranges from 2.8 % to higher than the 18%, The risk of infection can be high as 20 %. The episiotomy infections are preventable and can be reduced by practicing clear delivery and post-natal care. Midwives have an important role in the care of episiotomy wound after child birth.

Sodium chloride solution is favourable as it is an isotonic solution and does not interfere with the normal healing process. It is easily available, efficient, and cost effective. Sodium chloride solution is most commonly used solution due to safety

(lowest toxicity) and physiologic factors. The application of normal saline is useful in first 24 hours post-partum which reduces inflammatory reaction and oedema. It will not cause any burning pain and does not cause damage to the new tissues and thus promote the healing process.

Hence the study aimed to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers.

5.1 Discussion based on Socio demographic and obstetrical variables among interventional and control group,

- It is interesting to note that while mentioning about the age,In interventional group, majority of the subjects 13 (43.33%) belongs to the age group between 23-27 years. In control group, majority of the subjects 15 (50%) belongs to the age group between 23-27 years.
- When determining the education in interventional group, majority of the subjects 13 (43.33%) studied upto graduate. In control group, majority of the subjects 18 (60%) studied upto higher secondary education.
- Illustrating the occupation in interventional group, majority of the subjects 15 (50%) were housewife. In control group, majority of the subjects 19 (63.33%) were housewife.
- About monthly income in interventional group, majority of the subjects 17 (56.67%) were earned more than Rs.5001. In control group, majority of the subjects 14 (46.67%) were earned more than Rs.5001.
- Based on the type of family in interventional group, majority of the subjects 18 (60%) were joint family. In control group, majority of the subjects 16 (53.34%) were joint family.
- When comparing the food habit in interventional group, majority of the subjects

- 21 (70%) were non-vegetarian. In control group, majority the subjects 19 (63.33%) were non-vegetarian
- Related to the mother's Body Mass Index in interventional group, majority of the subjects 27 (90%) were between 18.6 to 25.0. In control group, majority of the subjects 28 (93.33%) were between 18.6 to 2.0 of BMI.
- While discussing weeks of gestation in interventional group, majority of the subjects 12 (40%) were had 38 weeks. In control group, majority of the subjects 15 (50%) were had 38 weeks of gestation.
- Based on the weight of baby at birth in interventional group, majority of babies weight 16 (53.33%) were had between 2.5-3.0 kg. In control group, majority of the babies 16 (53.33%) were had between 2.5-3.0 kg.
- In regard to the mode of delivery in interventional group, majority of the subjects 22 (73.34%) were had normal vaginal delivery. In control group, majority of the subjects 21 (70%) were had normal vaginal delivery.
- While considering the length of episiotomy in interventional group, majority of the subjects 21 (70%) were had 3 cms. In control group, majority of the subjects 19 (63.3%) were had 3 cm length of episiotomy.
- While mentioning the history of perineal infection none of them in both interventional group and control group had the perineal infections.

5.2 Discussion of study based on its objectives

- **The first objective of the study was to assess the episiotomy wound healing among postnatal mothers in interventional and control group at Government Rajaji hospital Madurai.**

REEDA scale was used to assess the level of episiotmy wound healing among postnatal mothers. In interventional group, majority of the subjects 27

(90%) had average wound healing, remaining 3 (10%) had poor wound healing and none of them had good wound healing. In control group, 28 (93.33%) had average wound healing, remaining 2 (6.67%) had poor wound healing, and none of them had good wound healing.

In the Pre test, the mean score was 7.50 with standard deviation was0.78 in the interventional group. Where as in control group the pre test mean score was 7.73 with standard deviation 1.05and the mean difference was 0.23.The student 't' test 0.98 was less than table value which was not significant at 0.33 level.

The present study findings was supported by **Inyang., etoh E.C, Umoiyoho A.J(2012)** conducted a retrospective study to determine the prevalence and complications associated with episiotomy procedure and perineal tears, among all vaginal births conducted inNigeria. Mothers who undergone vaginal delivery were interviewed .The study revealed that the episiotomy rate in the hospital was 45%. 90% of primi gravid parturients, had episiotomy. 2.8% mothers had breakdown of episiotomy repairs, 3.6 % of mothers requiring secondary suturing .The incidence of episiotomy decreased with increasing parity (20%), while the incidence of spontaneous vaginal tears increased with parity (45%). Thus the study concluded that as compared with perineal tears, episiotomy was associated with a statistically significant increased risk of wound breakdowns requiring secondary re-suturing ($p<0.001$).

It was also supported by **Amany, Ahmed, Safaa H. Mohamed,(2015)** conducted a retrospective study among 400 women at the end of postpartum period who attended maternity and children health care. The study also included 100 obstetricians to assess their experience towards routine episiotomy. Interviewed questionnaire form was done to collect data from women who underwent episiotomy and a second questionnaire to assess data of obstetricians in upper Egyptian hospitals.

The study revealed that delayed wound healing and gapping, were significantly increased by high number of previous episiotomy (p=0.013, and p=0.008 respectively), wound extension and/or hematoma (p=0.0009 and p<0.0001 respectively), and occurrence of postpartum wound infection (p<0.0001 for both). Postpartum dyspareunia, urinary and faecal incontinence were affected by multiparty (p=0.012, p=0.0009, and p=0.024 respectively), high number of previous episiotomy (p=0.003, p=0.0001 and p=0.045 respectively), wound extension (p=0.027, p=0.001, and p<0.0001 respectively) and presence of wound infection (p=0.049, p=0.48 and p=0.037 respectively).

The second objective of the study was to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.

The intervention sodium chloride application on episiotomy wound created vast difference between the scores obtained by post natal mothers between the level of pre test and post test.

Considering, Pre test level of episiotomy wound healing in interventional group, majority 27 (90%) were had average level of wound healing, 3 (10 %) were had poor level of wound healing and none of them had good wound healing. Where as in the post test majority 21 (70%) had good wound healing and remaining 9 (30%) were had average wound healing and none of them had poor wound healing.

Pre test level of episiotomy wound healing in control group, majority 28 (93.33%) were had average level of wound healing, 2 (6. 67%) were had poor level of wound healing and none of them had good wound healing. Whereas in the post test, majority 25 (83.33%) had average wound healing 4 (13.33%) were had good wound healing and 1 (3.33%) had poor wound healing.

Extended McNemar's test was done to find out the significant difference between pre test and post test level on episiotomy wound healing among interventional and control group. $\chi 2$= 23.00 which was greater than table value at 0.001 level.

In interventional group, the pre test mean score 7.50 (50.00%) with standard deviation 0.78 and thepost test mean score 3.80 (25.3%) with standard deviation 1.67 and the mean difference 3.70. The paired 't' test was done to find out the difference between pre test and post test level of wound healing among interventional group. The calculated 't' value 11.74 which was greater than table value at 0.001 level.

D Uygur, N Yesildaglar (2015) conducted a True experimental study on hydrogen peroxide versus sodium chloride application on episiotomy wound healing on 100 postnatal mothers using simple random sampling technique. 50 postnatal mothers were given hydrogen peroxide and 50 postnatal mothers were given sodium chloride application. The findings of the study denote that the application of sodium chloride has significant influence in episiotomy wound healing on 3rd day (p=0.035), 5th day (p=0.04). Thus the study revealed that the REEDA score was significantly low in the interventional group ($p<0.05$). and sodium chloride application is more effective in episiotomy wound healing.

Hence the hypotheses H_1: There is a significant difference between pre test and post test episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai was accepted.

The second objective of the study was to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.

In interventional group, majority of the subjects 21 (70%) had good wound healing, remaining 9 (30%) had average wound healing and none of them had poor wound healing. In control group, 25 (83.34%) had average wound healing 4 (13.33%) had good wound healing and remaining 1(3.33%) had poor wound healing.

In interventional group, the post test mean score was 3.80 with standard deviation was 1.67. In control group, the post test mean score was 7.13 with standard deviation was 1.22 and the mean difference 3.33. The student 't' test value 8.82 was greater than table value which was significant at 0.001 level.

Hence the hypotheses H_2- There is a significant difference between the post test episiotomy wound healing among postnatal mothers both in interventional group and control group was accepted.

Marynn. H (2016) conducted an experimental study on effectiveness of sodium chloride application in episiotomy wound healing among postnatal mothers admitted in postnatal units in Ludiana. The sample consisted of 120 postnatal mothers with episiotomy (60 in interventional group and 60 in control group). Interventional group received sodium chloride application and control group received routine care. Assessment of pain was done with scale and assessment of wound healing was done with Modified Davidson REEDA scale. They concluded that application of sodium chloride was effective in improving wound healing (p=0.001).

The Third objective was to associate the episiotomy wound healing among postnatal mothers both in interventional group and control group with their socio demographic and obstetrical variables.

In order to find out the association between the post test level of episiotomy wound healing among interventional group with their socio demographic and obstetrical variables. Chi square test reveals that there was a significant association between episiotomy wound healing and **age** ($\chi 2$=7.92)(P=0.02), **food habit**($\chi 2$=5.51)(P=0.02), **Body Mass Index** ($\chi 2$=7.77) (P=0.01), **mode of delivery**($\chi 2$= 6.08) (P=0.04)and **length of episiotomy** ($\chi 2$=3.99) (P=0.04).(i.e.,) Mothers aged between 23- 27 years, prepared vegetarian diet with 18.6-25 BMI and had normal vaginal delivery by 3 cm length of episiotomy. Other variables were not statistically associated with the level of episiotomy wound healing.

In order to find out the association between the post test level of episiotomy wound healing among control group with their socio demographic and obstetrical variables. Chi square test reveals that, there was no significant association between post test level of wound healing with their socio demographic and obstetrical variables in control group.

The present study findings was supported by **W. Dahil. (2011**) a comparative study on effect of Betadine and sodium chloride solution in the episiotomy wound healingamong100 samples. They were randomly divided into Betadine (n=50) and sodium chloride (n=50) groups. The result shown that swelling was less than 1cm at first and 5th day was 56% and 60% in betadine group and 46% and 62% sodium chloride group. Redness less than 3mm was 60%, 46% and 68% respectively, but it was 60%, 38% and 66% in sodium chloride solution group. There were no signs of wound opening and infection in both groups. The study concluded that sodium chloride solution has more effect on episiotomy wound healing than betadine solution.

Hence the hypotheses H_3: There is a significant association between episiotomy wound healing among postnatal mothers both interventional and control group with their socio demographic and obstetric variables was accepted.

The result of present study contributed more benefit which in turn to improve episiotomy wound healing among post natal mothers.

Summary and Conclusion, Implications & Recommendations

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with the summary of the study and conclusions drawn. It also clarifies the limitations of the study, the implications for different were as like nursing educations, administrations, nursing practice, nursing research and recommendations.

6.1 Summary

The present study was done to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers at Government Rajaji Hospital, Madurai.

The objectives of the study were

1. To assess the episiotomy wound healing among postnatal mothers in interventional and control group at Government Rajaji Hospital Madurai.
2. To evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.
3. To associate the episiotomy wound healing among postnatal mothers both interventional group and control group with their socio demographic and obstetrical variables.

The following hypotheses were set for the study

All the hypotheses were testedat0.05 level of significance

H_1: There is a significant difference between pre test and post test episiotomy wound healing among postnatal mothers in interventional group at Government Rajaji Hospital Madurai.

H_2: There is a significant difference between post test episiotomy wound healing among postnatal mothers both in interventional and control group at Government Rajaji Hospital Madurai.

H_3: There is a significant association between the episiotomy wound healing among postnatal mothers both interventional and control group with their socio demographic and clinical variables.

The study assumptions were,

- Post-natal mothers have varying or different level of episiotomy wound healing.
- Sodium chloride application is cost effective and it is easily followed by the postnatal mother in future.

The conceptual model in this study was based on modified Ludwig von and bertalanffy General System theory. True experimental- pre test and post test research design was used. Probability simple random sampling technique was used to select the sample. 60 postnatal mothers selected by probability simple random technique with mediolateral episiotomy. After testing the validity and reliability of the tool, pilot study was conducted among 10 non study subjects (5 in interventional group and 5 in control group) at postnatal ward, Government Rajaji Hospital to find out the feasibility and practicability. The main study was started from 04.06.18 to 13.07.18. data gathered was analysed by using both descriptive and inferential statistics.

The data collection tool consisted of two sections.

SECTION –I

Part - A

It consists of Socio Demographic variables such as age in years ,education, occupation, monthly income, type of family, food habit.

Part– B

It consists of Obstetric variables such as mothers' BMI, weeks of gestation, baby's weight, mode of delivery, length of episiotomy, history of perineal infections.

SECTION –II REEDA SCALE developed by Davidson (1968). It consists of 5 components Redness, Edema, Ecchymosis, Discharge, Approximation of wound edges. Each components have the maximum score of 3 and minimum score of 0. When the score increases that indicate the poor healing and the score decreases indicates good healing.

Scoring interpretation is:0-5 good healing, 6-10 average healing, 11-15 poor healing.

The tool and content was validated experts in the field of Obstetrics and Gynaecology. The data collection was done by standardized REEDA scale to assess the episiotomy wound healing. Pre test level of episiotomy wound healing was assessed on 1st postnatal day and intervention was given by researcher after the pre test assessment. sodium chloride application twice a day for three consecutive days (8th hourly interval) .effectiveness of sodium chloride w assessed on the 3rd day immediately after intervention by using REEDA scale.

Collected data was analysed by using both descriptive statistics (mean, standard deviation, frequency) and inferential statistics (unpaired 't' test and chi square) and results were analysed.

Major findings of the study

- While mentioning about the age, In interventional group, majority of the subjects 13 (43.33%) belongs to the age group between 23-27 years. In control group, majority of the subjects 15 (50%) belongs to the age group between 23-27 years.

- When determining the education in interventional group, majority of the subjects 13 (43.33%) studied up to graduate. In control group, majority of the subjects 18 (60%) studied up to higher secondary education.
- Illustrating the occupation in interventional group, majority of the subjects 15 (50%) were housewife. In control group, majority of the subjects 19 (63.33%) were housewife.
- About monthly income in interventional group, majority of the subjects 17 (56.67%) were earned more than Rs.5001. In control group, majority of the subjects 14 (46.67%) were earned more than Rs.5001.
- Based on the type of family in interventional group, majority of the subjects 18 (60%) were joint family. In control group, majority of the subjects 16 (53.34%) were joint family.
- When comparing the food habit in interventional group, majority of the subjects 21 (70%) were non-vegetarian. In control group, majority the subjects 19 (63.33%) were non-vegetarian
- Related to the mother's Body Mass Index in interventional group, majority of the subjects 27 (90%) were between 18.6-25.0. In control group, majority of the subjects 28 (93.33%) were between 18.6-2.0 of BMI.
- While discussing weeks of gestation in interventional group, majority of the subjects 12 (40%) were had 38 week. In control group, majority of the subjects 15 (50%) were had 38 weeks of gestation.
- Based on the weight of baby at birth in interventional group, majority of babies weight 16 (53.33%) were between 2.5-3.0 kg. In control group, majority of the babies 16 (53.33%) were between 2.5-3.0 kg.

- In regard to the mode of delivery in interventional group, majority of the subjects 22 (73.34%) were had normal vaginal delivery. In control group, majority of the subjects 21 (70%) were had normal vaginal delivery.
- While considering the length of episiotomy in interventional group, majority of the subjects 21 (70%) had 3 cms. In control group, majority of the subjects 19 (63.3%) had 3 cm length of episiotomy.
- While mentioning the history of perineal infection none of them in both interventional group and control group had the perineal infections.
- REEDA scale was used to assess the level of episiotmy wound healing among postnatal mothers. In interventional group, majority of the subjects 27 (90%) had average wound healing, remaining 3 (10%) had poor wound healing and none of them had good wound healing. In control group, 28 (93.33%) had average wound healing, remaining 2 (6.67%) had poor wound healing,and none of them had good wound healing.
- In the Pre test, the mean score was 7.50 with standard deviation was 0.78 in the interventional group. Where as in control group the pre test mean score was 7.73 with standard deviation 1.05 and the mean difference was 0.23. The student 't' test 0.98 was less than table value which was not significant.
- The intervention sodium chloride application on episiotomy wound created vast difference between the scores obtained by post natal mothers between the pre test and post test.
- Pre test level of episiotomy wound healing in interventional group, majority 27 (90%) were had average level of wound healing, 3 (10 %) were had poor level of wound healing and none of them had good wound healing. Where as in the

post test majority 21 (70%) had good wound healing and remaining 9 (30%) were had average wound healing and none of them had poor wound healing.

- Pre test level of episiotomy wound healing in control group, majority 28 (93.33%) were had average level of wound healing, 2 (6. 67%) were had good level of wound healing and none of them had good wound healing. Where as in the post test majority 25 (83.33%) had average wound healing 4 (13.33%) were had average wound healing and 1 (3.33%) had poor wound healing.
- Extended McNemar's test was done to find out the significant difference between pre test and post test level on episiotomy wound healing among interventional and control group. $\chi 2$= 23.00 which was greater than table value at 0.001 level.
- In interventional group, the pre test mean score 7.50 (50.00%) with standard deviation 0.78 and the post test mean score 3.80 (25.3%) with standard deviation 1.67 and the mean difference 3.70. The paired 't' test was done to find out the difference between pre test and post test level of wound healing among interventional group. The calculated 't' value 11.74 which was greater than table value at 0.001 level.
- In interventional group, majority of the subjects 21 (70%) had good wound healing, remaining 9 (30%) had average wound healing and none of them had poor wound healing. In control group, 25 (83.34%) had average wound healing 4 (13.33%) had good wound healing and remaining 1(3.33%) had poor wound healing.
- In interventional group, the post test mean score was 3.80 with standard deviation was 1.67. In control group, the post test mean score was 7.13 with

standard deviation was 1.22 and the mean difference 3.33. The student 't' test value 8.82 was greater than table value which was significant at 0.001 level.

- In order to find out the association between the post test level of episiotomy wound healing among interventional group with their socio demographic and obstetrical variables. Chi square test reveals that there was a significant association between episiotomy wound healing and **age** ($\chi 2$=7.92) (P=0.02), **food habit** ($\chi 2$=5.51) (P=0.02), **Body Mass Index** ($\chi 2$=7.77) (P=0.01), **mode of delivery** ($\chi 2$= 6.08) (P=0.04) and **length of episiotomy** ($\chi 2$=3.99) (P=0.04). (i.e) Mothers aged between 23-27 years, vegetarian mothers, BMI between 18.6 –25, normal vaginal delivery and 3 cm length of episiotomy. Other variables were not statistically associated with the level of episiotomy wound healing.
- In order to find out the association between the post test level of episiotomy wound healing among control group with their socio demographic and obstetrical variables. Chi quare test reveals that, there was no significant association between post test level of wound healing with their socio demographic and obstetrical variables in control group.

6.2 Conclusion

The study findings evidenced that sodium chloride application is an effective intervention to enhance the episiotomy wound healing which increases the comfort to the postnatal mothers while feeding the babies and for their daily activities during postnatal period. Further the study revealed that there was a significant association between the post test level of episiotomy wound healing with their socio demographic and obstetrical variables.

6.3 Implications of the study

The finding of the study have several implications on nursing practice, education, administration and nursing research that can be used in the following areas of profession.

Implications for nursing practice

- The nurses must be trained to assess the level of episiotomy wound healing among postnatal mothers who is undergone to episiotomy.
- The nurses must have the knowledge to provide non-pharmacological, cost effective approaches to improve the episiotomy wound healing and its comfort to the mothers during postnatal period
- In the post natal ward, provisions can be made to provide sodium chloride solution for application on episiotomy wound to all postnatal mothers, as the findings of the study clearly enlighten the effectiveness in improving episiotomy wound healing.
- Nursing personnel can incorporate the provision of sodium chloride application as a routine part of level of episiotomy wound healing in their clinical practice.

Implications for nursing education

- Continuing nursing education programme is the key components to update and improve the knowledge of all nursing personnel
- The nursing student should be taught the importance of perineal care and sodium chloride application on episiotomy wound healing among postnatal mothers.
- Nurse educator should orient the students towards various forms of interventions of episiotomy wound healing in the postnatal ward
- Nurse educator motivate student nurses to use REEDA scale among postnatal mothers to identify the wound healing status of episiotomy wound.

Implications for nursing administrations

- With technological advances and ever growing challenges of health care means, the administrations have a responsibility to arrange nurses with substantive continuing education opportunities regarding postnatal care.
- The nurse administrators can motivate, supervise and take initiative to implement the sodium chloride application in post natal mothers to improve episiotomy wound healing.
- The nurse administrator can recommend to supply sodium chloride solutions in postnatal wards so that nurses can provide sodium chloride application on episiotomy wound among postnatal mothers.
- The nurse administrators can also encourage the nurses to use other safe cost effective interventions such as infra red therapy, cold packs to improve the episiotomy wound healing.
- The nurse administrator enable the nurses to update their knowledge in the latest innovations.

Implications for nursing research

- The nurse educator should motivate the clinical nurses and community health nurses to apply research findings and can bring new innovative non pharmacological measures to improve episiotomy wound healing among postnatal mothers.
- The nurse educator should encourage clinical nurse to conduct extensive and intensive research studies on the effectiveness of sodium chloride application other than episiotomy wound

6.4 Recommendations

1. This study can be replicated with a large sample size for better generalizations.
2. A comparative study can be done between sodium chloride application and other complimentary therapies like betadine sitz bath, warm water sitz bath, infrared therapy.
3. The hospital authority can practice sodium chloride application to improve episiotomy wound healing.
4. A similar study can be done to identify the impact of sodium chloride application in reducing later complications with five or seven days nursing intervention.

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Appendices

APPENDIX I

ETHICAL COMMITTEE APPROVAL LETTER

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6. Mrs.Mercy Immaculate Rubalatha, M.A., B.Ed., Social worker, Gandhi Nagar, Madurai
7. Thiru.Pala.Ramasamy, B.A.,B.L., Advocate, Palam Station Road, Sellur.
8. Thiru.P.K.M.Chelliah, B.A., Businessman,21, Jawahar Street, Gandhi Nagar, Madurai.

ETHICS COMMITTEE CERTIFICATE

Name of the Candidate	:	Jameela S
Course	:	M.Sc., Obstetrics and Gynaecological Nursing
Period of Study	:	2016-2018
College	:	MADURAI MEDICAL COLLEGE
Research Topic	:	A study to evaluate the effectiveness of sodium chloride application on episiotomy wound healing among postnatal mothers at Govt. Rajaji Hospital, Madurai
Ethical Committee as on	:	16.05.2018

The Ethics Committee, Madurai Medical College has decided to inform that your Research proposal is accepted.

Member Secretary — Chairman — Dean / Convenor

Prof Dr V Nagaraajan
M.D., MNAMS, D.M., Dsc.,(Neuro), Dsc (Hon)
CHAIRMAN
IEC - Madurai Medical College
Madurai

DEAN
Madurai Medical College
Madurai-20

16 MAY 2018

APPENDIX II

CONTENT VALIDITY CERTIFICATES

CERTIFICATE OF VALIDATION

This is certify that the tool

SECTION A- Demographic data

SECTION B- REEDA SCALE

Prepared for data collection by Jameela.S II Year MSc Nursing student, College of Nursing, Madurai Medical College, Madurai. Who has undertaken the study field on thesis entitled **A STUDY TO EVALUATE THE EFFECTIVENESS OF SODIUM CHLORIDE APPLICATION ON EPISIOTOMY WOUND HEALING AMONG POSTNATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL MADURAI**. Has been validated by me.

SIGNATURE OF THE EXPERT

Dr. K.S. CHITRA, MD., DGO., DNB.,

Name:

Designation: Professor

PROF. & HOD
DEPT. OF O &G
MADURAI MEDICAL COLLEGE
MADURAI

Institution

MADURAI MEDICAL COLLEGE
MADURAI.

CERTIFICATE OF VALIDATION

This is certify that the tool

SECTION A- Demographic data

SECTION B- REEDA SCALE

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SIGNATURE OF THE EXPERT

Name: Dr. N. SUMATHI

Designation: Professor O&G

Institution

PROF. & HOD
DEPT. OF O &G
MADURAI MEDICAL COLLEGE
MADURAI

CERTIFICATE OF VALIDATION

This is certify that the tool

SECTION A- Demographic data

SECTION B- REEDA SCALE

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SIGNATURE OF THE EXPERT 04/06/2018

Name: PROF. M. SHABERABANU

Designation: PRINCIPAL

Institution: PRINCIPAL
VIKRAM COLLEGE OF NURSING
SIVAGANGAI RING ROAD JUNCTION
MADURAI-625 020

CERTIFICATE OF VALIDATION

This is certify that the tool

SECTION A- Demographic data

SECTION B- REEDA SCALE

Prepared for data collection by Jameela.S II Year M.Sc Nursing student, College of Nursing, Madurai Medical College, Madurai. who has undertaken the study field on thesis entitled **A STUDY TO ASSESS THE EFFECTIVENESS OF SODIUM CHLORIDE SOLUTION ON EPISIOTOMY WOUND HEALING AMONG POSTNATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL MADURAI**. has been validated by me.

SIGNATURE OF THE EXPERT

Mrs. S. SELVA PRIYA, M.Sc.(N),
HOD OBG NURSING
CHITHIRAI COLLEGE OF NURSING
MADURAI-625 009

Name: S. SELVA PRIYA

Designation: VICE PRINCIPAL

Institution CHITHIRAI COLLEGE OF NURSING

MADURAI

CERTIFICATE OF VALIDATION

This is certify that the tool

SECTION A- Demographic data

SECTION B- REEDA SCALE

Prepared for data collection by Jameela.S II Year M.Sc Nursing student, College of Nursing, Madurai Medical College, Madurai. who has undertaken the study field on thesis entitled **A STUDY TO ASSESS THE EFFECTIVENESS OF SODIUM CHLORIDE SOLUTION ON EPISIOTOMY WOUND HEALING AMONG POSTNATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL MADURAI**. has been validated by me.

Sudha K.N. 18/5/18

SIGNATURE OF THE EXPERT

Name: MS. SUDHA K.N., M.Sc.(N) OBG

Designation: ASSOC. PROFESSOR,

Institution: RASS ACADEMY COLLEGE OF NSG, POOVANTHI

RASS ACADEMY COLLEGE OF NURSING POOVANTHI 630 311

APPENDIX III

INFORMED CONSENT FORM

NAME: DATE :

Here I am acknowledging that information regarding the study topic was explain to me and the positive reason was pointed out. I am voluntarily willing to participate in the study. At any time I am free to exclude from the study and promised that my all personal information should be kept in confidential.

Signature of the participants

ஒப்புதல் அறிக்கை

பெயர் நாள்

எனக்கு, இந்த செவிலிய ஆய்வினை பிரவசத்தின் போது பிறப்புறுப்பில் இடப்பட்ட தையலில் சோடியம் குளோரைடு; வைத்தல் பற்றிய முழுவிபரம் விளக்கமாக எடுத்துரைக்கப்பட்டது. இந்த ஆய்வில் பங்கு கொள்வதில் இருக்கும் நன்மைகள் மற்றும் பின் விளைவுகள் பற்றி முழுமையாக புரிந்து கொண்டேன். இந்த ஆய்வில் நானாக முன்வந்து பங்கு பெறுகிறன். மேலும் எனக்கு இந்த ஆய்வில் இருந்து எந்த சமயத்திலும் விலகி கொள்ள, முழு அனுமதி வழங்கப்பட்டுள்ளது. என்னுடைய விபரங்களை பார்வையிட்டு அதை ஆய்வில் பயன்படுத்தி கொள்ள முழு அனுமதி அளிக்கிறேன். என்னுடைய பெயர் மற்றும் அடையாளங்களை இரகசியமாக வைத்து கொள்ளப்படும் என்று எனக்கு உறுதியளிக்கப்பட்டுள்ளது.

இப்படிக்கு

APPENDIX IV

LETTER SEEKING AND GRANTING PERMISSION TO CONDUCT THE PILOT STUDY AND MAIN STUDY AT GRH, MADURAI

LETTER SEEKING PERMISSION TO CONDUCTING THE STUDY

From,

Jameela.s

M.Sc(N) II year student

College of nursing,

Madurai Medical College,

Madurai .

To

Professor & Head of the Department,

Obstetrics and Gynaecology,

Government Rajaji Hospital,

Madurai .

Through the proper channel,

Respected Madam,

Sub : College of Nursing ,Madurai Medical College, Madurai-M.Sc (N) II year obstetrics and gynaecology student-permission for conducting pilot study and main study from 21st may onwards in post natal ward at Government Rajaji Hospital, Madurai, request –regarding.

As per the Indian Nursing Council and The Tamil Nadu Dr.M.G.R medical university curriculum requirement of M.Sc nursing candidates are required to conduct a dissertation study for the partial fulfilment of the course in their respective departments.

I wish to conduct a study topic "**A study to evaluate the effectiveness of sodium chloride solution on episiotomy wound healing among postnatal mothers at Government Rajaji Hospital, Madurai"**. I assure that I will not interfere with the routine activities of the department .

Hence, I kindly request you to consider my requisition and permit me to conduct the study in this setting.

Thanking you,

Madurai- 20

Date : 18/05/2018

yours sincerely,

(Jameela.s)

Gen. Medicine 18/5/18.

Forwarded S.P 18/5/18

19/5/18

18/05/18

PROF. & HOD
DEPT. OF O&G
MADURAI MEDICAL COLLEGE
MADURAI

APPENDIX V

Socio Demographic variables - English

Section – A

PART I

Socio Demographic variables

1. Age

a) 18-22

b) 23-27

c) 28-32

d) > 32

2. Education

a) No formal education

b) Primary education

c) Higher secondary education

d) Graduate

3. Occupation

a) House wife

b) Coolie

c) Private employee

d) Government employee

4. Monthly Income

a) Rs.2500-Rs.3000

b) Rs.3001-Rs.4000

c) Rs.4001-Rs.5000

d) Above Rs.5001

5. Type of family

a) Nuclear family

b) Joint family

c) Extended family

d) Separated family

6. Food habits

a) Vegetarian

b) Non-vegetarian

c) Mixed

Part II

Obstetrical variable

7. Mother's BMI

a) < 18.5

b) 18.6-25

c) 2-30 d.>31

8. Weeks of gestation

a) 38 wks

b) 39 wks

c) 40 wks

d) Above 40 wks

9. Weight of baby at birth

a) 2.5- 3 kg

b) 3.1 –3.5 kg

c) 3.6- 4 kg

d) Above 4.1 kg

10. Mode of delivery

a) Forceps delivery

b) Normal vaginal delivery

c) Vaccum delivery

11. Length of episiotomy

a) 2cms

b) 3cms

c) 4cms

d) 5cms

12. History of perineal infection

a) Yes

b) No

if yes specify----------

APPENDIX VI

Research Tool - English

SECTION –B

REEDA SCALE

(REDNESS, EDEMA, ECCHYMOSIS, EDEMA, DISCHARGE AND APRROXIMATION OF WOUND EDGES

S.NO	COMPONENTS	SCORE
1	**REDNESS** 0- No redness 1- Redness over one or two suture of episiotomy incision 2- Redness limited to the suture of episiotomy incision 3- Redness extends beyond to the suture line of episiotomy incision	
2	**EDEMA** 0- No Edema 1- Edema over one or two suture of episiotomy incision 2- Edema limited to the suture of episiotomy incision 3- Edema extends beyond to the suture line of episiotomy Incision	
3	**ECCHYMOSIS** 0-No ecchymosis 1-O.25-0.5cm in size 2-0.5-1cm in size 3- More than 1 cm	
4	**DISCHARGE** 0-No discharge 1-Serous discharge 2- Sero sanguinous discharge 3- Bloody purulent discharge	
5	**APPROXIMATION WOUND EDGES** 0- No gaping ends approximate 1- Skin separation 2- Skin & subcutaneous fat separation 3- Skin, subcutaneous fat & facial layer separation.	

SCORING

0-5= good healing

6-10=average healing

11-15= poor healing

TOTAL SCORE=15

APPENDIX VII

Socio Demographic Variables - Tamil

பிரிவு-1

தன்னிலை விபர குறிப்பு

1. வயது

    அ. 18-22

    ஆ. 23-27

    இ. 28-32

    ஈ. 33 வயதுக்குமேல்

2. கல்வி தகுதி

    அ. படிக்கவில்லை

    ஆ. ஆரம்பக்கல்வி

    இ. பள்ளிப்படிப்பு

    ஈ. கல்லூரிபடிப்பு

3. தொழில்

    அ. குடும்பத்தலைவி

    ஆ. கூலி

    இ. அரசங்கவேலை

    ஈ. தனியார்வேலை

4. மாதவருமானம்

    அ. ரூ 2500-3000

    ஆ. ரூ 3001-4000

    இ. ரூ 4001-5000

    ஈ. ரூ 5001க்கு மேல்

5. குடும்பவகை

    அ. தனிக்குடும்பம்

    ஆ. கூட்டுக்குடும்பம்

    இ. விடுவாக்குகுடும்பம்

பிரிவு-2

மகப்பேறு பற்றிய விபரக்குறிப்பு

1. தாயின் உடல் பருமன் எடை

அ. 18 கீழ்

ஆ. 18.5-25

இ. 26-30

ஈ. 30க்கு மேல்

2. பிரசவகால வாரங்களில்

அ. 38 வாரங்களில்

ஆ. 39 வாரங்கள்

இ. 40 வாரங்கள்

ஈ. 40 க்கு மேல்

3. பிறந்த குழந்தையின் எடை

அ. 2.5 கி.கி-3 கி.கி

ஆ. 3.1 கி.கி-3.5 கி.கி

இ. 3.6 கி.கி-4கி.கி

ஈ. 4.1. கி.கி.க்கு மேல்

4. பிரசவமுறை

அ. கருவி பிரசவம்

ஆ. சுகப்பிரசவம்

இ. வெற்றிட விநியோக வீச்சு

5. பிறப்புறுப்பில் இடப்பட்டதையலின் நீளம்

அ. 2 செ.மீ

ஆ. 3 செ.மீ

இ. 4 செ.மீ

ஈ. 5 செ.மீ

6. ஏதேனும் நோய் தொற்று வந்துள்ளதா

அ. ஆம்

ஆ. இல்லை

APPENDIX VIII

Research Tool - Tamil

ரீ டா அளவுகோல் வரிசை எண் கூறுகள்

வரிசை எண்	கூறுகள்	கூறுகள்
1.	**சிவந்தத்தன்மை** 0-சிவந்தத்தன்மை இல்லாதிருத்தல் 1.பிறப்புறுப்பில் இடைப்பட்ட தையலின் ஒன்று மற்றும் இரண்டு சிவந்து காணப்படுதல் 2.அனைத்து தையல்களும் சிவந்து காணப்படுதல் 3.பிறப்புறுப்பில் இடைப்பட்ட தையல்களுக்கு அப்பால் சிவந்து காணபடுதல்	
2.	**வீக்கம்** 0-வீக்கம் இல்லாதிருத்தல் 1.பிறப்புறுப்பில் இடைப்பட்ட தையயில் ஒன்று மற்றும் இரண்டில் வீக்கம் காணபடுத்தல் 2.அணைத்து தையல்களும் வீக்கம் காணப்படுதல் 3.பிறப்புறுப்பில் இடைப்பட்ட தையல்களுக்கு அப்பால் வீக்கம் காணப்படுதல்	
3.	**தோலுக்கடியில் இரத்தக்கோர்வை** 0- இரத்தக்கோர்வை இல்லாதிருத்தல் 1. 0-25 முதல் 0.5 செமீ அளவு இரத்தக்கோர்வை 2. 0-25 முதல் 0.5 செமீ அளவு இரத்தக்கோர்வை 3. 0-25 முதல் 0.5 செமீ அளவு இரத்தக்கோர்வை	
4.	**சீழ் வடிதல்** 0-.சீழ் இல்லாதிருத்தல் 1. பழுப்பு நிற சீழ் வடிதல் 2.பழுப்பு மற்றும் இரத்தம் கலந்த சீழ் வடிதல் 3.இரத்தம் தோய்த்த சீழ் வடிதல்	
5.	**தையல் இடைவெளியின் தன்மை** 0-தையலுக்கு இடையே இடைவெளி இல்லாதிருத்தல் 1.தோல் பிரிந்து காணப்படுதல் 2.தோல் மற்றும் தோலடி கொழுப்பு பிரிந்து காணப்படுதல் 3.தோல் ,தோலடிகொழுப்பு மற்றும் சதை கொழுப்பு அடுக்குபிரிந்து காணப்படுதல்	

மதிப்பெண்கள்

0-5 = வேகமாக காயம் ஆறுதல்

6-10 =தாமதமாக காயம் ஆறுதல்

11-15= மிகத்தாமதமாக காயம் ஆறுதல்

மொத்தமதிப்பெண்கள் =15

APPENDIX IX

ENGLISH EDITING CERTIFICATE

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation by JAMEELA.S II year MSc Nursing student ,college of Nursing, Madurai medical college, Madurai who has undertaken the study field on dissertation entitled " **EFFECTIVENESS OF SODIUM CHLORIDE APPLICATION ON EPISIOTOMY WOUND HEALING AMONG POST NATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL MADURAI**." Has been edited for English language appropriateness.

SIGNATURE: A. Suganthi

NAME: A. SUGANTHI.

DESIGNATION: B.T. ASST. (ENGLISH)

INSTITUTION: CORPORATION HIGH SL. TALLAKULAM, MDU.-02

TALLAKULAM CORPORATION
HIGH SCHOOL
MADURAI- 625 002

APPENDIX X

TAMIL EDITING CERTIFICATE

CERTIFICATE OF TAMIL EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation by JAMEELA.S II year MSc Nursing student ,college of Nursing, Madurai medical college, Madurai who has undertaken the study field on dissertation entitled "**EFFECTIVENESS OF SODIUM CHLORIDE APPLICATION ON EPISIOTOMY WOUND HEALING AMONG POST NATAL MOTHERS AT GOVERNMENT RAJAJI HOSPITAL MADURAI.**" Has been edited for Tamil language appropriateness.

SIGNATURE:

NAME: Ll. [illegible]

DESIGNATION: B.T. ASST.

INSTITUTION: Corporation High School
Tallakulam.
Madurai. 2.

TALLAKULAM CORPORATION
HIGH SCHOOL
MADURAI- 625 002

APPENDIX XI

PHOTOGRAPHS

DATA COLLECTION

EXPLAINING PROCEDURE

DOING INTERVENTION