

**EFFECTIVENESS OF BETADINE Vs CHLORHEXIDINE
PERINEAL CARE ON REDUCING THE OCCURRENCE OF
URINARY TRACT INFECTION AMONG MOTHERS WITH
INDWELLING CATHETER IN POST OPERATIVE
CAESAREAN WARD AT GOVERNMENT RAJAJI
HOSPITAL, MADURAI.**

**M.Sc (NURSING) DEGREE EXAMINATION
BRANCH-III OBSTETRICS AND GYNAECOLOGICAL
NURSING
COLLEGE OF NURSING
MADURAI MEDICAL COLLEGE, MADURAI-20**



A Dissertation Submitted to
**THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY,
CHENNAI-600 032**

In partial fulfillment of the requirements for the degree
MASTER OF SCIENCE IN NURSING

OCTOBER 2018

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CERTIFICATE

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ACKNOWLEDGEMENT

*“GOD DOESN'T GIVE US WHAT WE CAN HANDLE; GOD HELP US TO HANDLE
WHAT WE ARE GIVEN”*

My great indebted thanks to the **God Almighty** for his abundant blessings, endless grace and love showered on me in providing the strength to overcome all the difficulties and made me complete my study successfully, without which it would not have been possible.

There are several hands behind in giving a shape to this research study, which would be impossible to mention all by name. There are some whom the investigator would particularly like to thank.

I extend my gratitude to **Dr. D. Maruthupandian, M.S., F.A.I.S., F.I.C.S.,** Dean Madurai Medical College, Madurai for his acceptance and approval of the study.

I wish to extend my heartfelt thanks to **Dr.S. Rajamani M.Sc (N)., M.B.A (HM)., M.Sc (Psy)., Ph.D.,** Principal Incharge, Department of Mental health Nursing, College of Nursing, Madurai Medical College, Madurai for the guidance, valuable suggestions and constant and affectionate encouragement in each and every steps of the study. It is very essential to mention that her wisdom and helping tendency has made my research a lively and everlasting one.

I wish to express my deep sense of gratitude and heartfelt thanks to **Prof. Mrs. S. Poonguzhali, M.Sc (N)., M.A., M.B.A (HM)., Ph.D.,** Former Principal, College of Nursing, Madurai Medical College, Madurai for her guidance and expert suggestions to carry out the study.

I extend my thanks to **Prof. Dr. V. N. Nagarajan, MD, MNAMS., DM(Neuro), DSC (Neuroscience), DSC (Hons), Professor Emeritus in Neuroscience, Tamilnadu Govt. Dr. M.G. R medical university** for approval this study.

I also express my sincere gratitude to **Mrs. S. Auyisha Sithik M.Sc (N), M.B.A (HR),** Faculty in Nursing, Department of Obstetrics and Gynaecology, College of Nursing, Madurai Medical College, Madurai, 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 would like to thank **Mrs.S. Lilli Puspam, M.Sc (N),** Lecturer, Obstetrical and Gynaecological Nursing, College of Nursing, Madurai Medical, college for the timely help and guidance in pursuing the study.

I would like to express my wholehearted thanks to **Ms. P. Malliga M.Sc (N), M.A (Soc),** Faculty in Nursing, Department of Obstetrics and Gynaecology, College of Nursing, Madurai Medical College, Madurai, for her words of appreciation, unwavering encouragement, affectionate enduring support, timely correction and guidance that she has bestowed on me.

My sincere thanks to **Dr. C. Shanthi, M.D., D.G.O.,** Professor and HOD, Obstetrics and Gynaecology department, Government Rajaji Hospital, Madurai. For giving her valuable suggestion and guidance rendered to complete this study.

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 necessary guidance in statistical analysis.

I am thankful to **Mr. Manikandan, B.Sc., M.L.I.S.**, Librarian, College of nursing, Madurai medical college, Madurai for his guidance and support.

I wish to thank to the **Staff nurses** of the department of Obstetrics and Gynaecology at Government Rajaji Hospital, Madurai who have extended their cooperation during the study.

I would like to express my deepest thank to all the **Post caesarean mothers** in post operative caesarean ward, at Governement Rajaji Hospital, Madurai who had participated in the study without them it would have been impossible to complete this study.

A word of appreciation to **Laser point staffs**, Madurai, for untiring, innovative, diligent effort for carefully printing my dissertation.

My grateful thanks to my beloved parents **Mr.K.Ganesan** and **Mrs. G. Emmiammal** for their love, prayer, enduring support and constant encouragement throughout this study.

Life has blessed me with an understanding, lovable and value oriented my beloved brother **Mr. G Santhosh Kumar B. Tech (Petro Engg)., PG (Dip in OHSM).**, for his Constant support, timely help, prayer and continuous encouragement to complete this project as a very successive one.

I extend my thanks to my loveable friends **Ms. A .Bebina Vincia Anjala Mary** and **Mrs. D. Saranya** for their timely help and motivation for completing this study.

I certainly owe my gratitude to my classmates, and juniors who provided encouragement, and supported me to complete the study.

ABSTRACT

Title: Effectiveness of betadine Vs chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter at GRH, Madurai. **Objective:** To compare the effectiveness between betadine perineal care (interventional group I) and chlorhexidine perineal care (interventional group II) among mothers with indwelling catheter. To associate the level of UTI among mothers with indwelling catheter. **Hypotheses:** There is a significant difference between post test level of UTI among mothers with indwelling catheter in interventional group I and II. There is a significant association between the level of UTI among mothers with indwelling catheter in interventional group I and II with their selected socio demographic and obstetric variables. **Methodology:** True experimental pretest and post test design was used. 60 subjects were selected (30 in each group) by simple random sampling. Perineal care was given twice daily for 3 consecutive days from 1st Post-operative day. **Results:** The findings reveals that, after intervention level of UTI was reduced and its confirmed with 't' value 2.27 at 0.001 level. **Conclusion:** The study concluded that chlorhexidine perineal care was effective on reducing UTI among mothers with indwelling catheter.

Key Words: UTI (Urinary tract infection), indwelling catheter, Betadine, Chlorhexidine.

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LIST OF ABBREVIATIONS

CAUTI	-	Catheter Associated Urinary Tract Infection
CI	-	Class interval
HAI	-	Hospital acquired infection
UTI	-	Urinary Tract Infection
RCT	-	Randomized control Trail
NRCT	-	Non-Randomized control Trail
PVPI	-	Polyvinyl Pyrrolidone – Iodine
SD	-	Standard Deviation
GRH	-	Government Rajaji Hospital
MD	-	Mean Deviation
WHO	-	World health organization

INTRODUCTION

CHAPTER – I

INTRODUCTION

“God could not be everywhere, and therefore he made mothers”

-Rudyard Kipling

One of the adorable creation of God is Women. Women has the nature's gift of giving birth which makes more special. A woman is said to be completed only when she gave birth to a newborn and become a mother. A mother is the most precious person in every one's life on which one cannot describe completely in words. A mother is unique in this world in the life of everyone's as a living goddess.

Pregnancy is a unique experience for the women and each pregnancy brings every woman a new feeling of joy and adaptation with the pregnancy. Pregnancy is the most exciting period of expectation and fulfillment in women's life. Pregnancy and child birth is a great event in the life of every woman for which she aspires and longs for with great expectation.

Childbirth is one of the most marvelous and memorable segment in a woman's life. It does not really matter if the child is the first, second or the third one. Each experience is unique and calls for a celebration.

Most of the mothers are healthy during pregnancy and have good reason to avoid surgical deliveries; whenever the condition does not permit caesarean section is suggested. After caesarean section the mother may report more pain and increased difficulty coping with pain and other discomforts.

A caesarean section is a surgical procedure in which incision is made through a woman's abdomen and uterus to deliver her baby. Caesarean sections, also called caesarean deliveries are performed whenever abnormal conditions complicate

the labour and vaginal delivery, threatening the life or health of mother or the baby. The most common reason that a caesarean section is performed because the women have had a previous caesarean section.

The common reason that caesarean section is performed when there is difficulty in children due to non-progressive, difficult labour conditions like abnormalities in the position of the fetus; or abnormalities in the labour, including weak or infrequent contractions and cephalopelvic dispropositions, placenta previa, abruptio placenta. Caesarean sections are performed in response to fetal distress

Post partum care after caesarean section is similar to post operative care with exception of palpating the fundus for firmness. A woman who undergoes a caesarean section requires both the care gives to every new mothers and the care given to every patient recovering from major surgery. As caesarean section is the major abdominal surgery it is mandatory to be catheterized before the surgery. If the care of the mother during postpartum is not included with cleaning of perineum along with catheter it lead to serious complications like pyelonehritis, recurrent urinary tract infections episodes , acute renal failure as major complications.

Caesarean section has become an increasingly common method of delivery worldwide and also it is increasing in developing countries like our India. Caesarean section is an operative procedure where fetus are delivered through an incision on the abdominal and uterine walls. LSCS is a surgical procedure it carries more risk to mother & baby. As the mother is catheterized during the operation and carries the catheter during her postpartum increases the risk of puerperal infection.

In a study 5.5% of vaginal deliveries and 7.4%of caesarean deliveries resulted in a postpartum infection. The postpartum infection rate was 6.0%. Urinary tract infection accounted for nearly half of the infection in patients following caesarean

delivery (3.6% of caesarean delivery) . Patients with UTIs may have tenderness at costo vertebral angles and an elevated temperature. Causes and risk factors of UTI may include Bacteria [*E.coli* and *klebsiella*, *proteus* and *enterbacter* species] and form of invasive manipulation of the urethra.

Human body has the capacity to remove the both the liquid and solid waste. The **urinary system**, also known as the **renal system** or **urinary tract**. The functions of the urinary system is to eliminate the waste from our body, regulate blood volume and blood pressure, control levels of electrolytes and metabolites, and regulate blood pH. The urinary tract is the body's drainage system for the eventual removal of urine. Following filtration of blood and further processing, wastes (in the form of urine) exit the kidney via the ureters, tubes made of smooth muscle fibres that propel urine towards the urinary bladder, where it is stored and subsequently expelled from the body by urination (voiding). The female and male urinary system are very similar, differing only in the length of the urethra.

During urination, the urine is passed from the bladder through the urethra to the outside of the body. 800–2,000 milliliters (ml) of urine are normally produced every day in a healthy human. This amount varies according to fluid intake and kidney function.

The urinary tract infection is defined as an infection of one or more structures in the urinary system. (Zalmanovici, 2010)

In hospital settings, clinicians may use guideline-based definitions in the diagnosis of urinary tract infections. **The Infectious Diseases Society of America** gives various forms of definition. They are 1. Asymptomatic bacteriuria, or asymptomatic urinary infection: Isolation of a specified quantitative count of bacteria in an appropriately collected urine specimen obtained from a person without

symptoms or signs referable to urinary infection 2. Acute uncomplicated urinary tract infection: Symptomatic bladder infection characterized by frequency, urgency, dysuria, or suprapubic pain in a woman with a normal genitourinary tract, and is associated with both genetic and behavioral determinants. 3. Acute nonobstructive-pyelonephritis: Renal infection characterized by costovertebral angle pain and tenderness, often with fever; it occurs in the same population that experiences acute uncomplicated urinary infection. 4. Complicated urinary tract infection: Symptomatic urinary infection involving either the bladder or kidneys, found in individuals with functional or structural abnormalities of the genitourinary tract. 5. Pyuria: The presence of increased numbers of polymorphonuclear leukocytes in the urine, evidence of an inflammatory response in the urinary tract.

Urinary tract infections are responsible for over a third of all hospital acquired infections. The condition is more common in women than in men. After the flu and common cold, UTI are most common medical complaint among women in their reproductive period women's are 30 times more likely to have UTIs than men. The higher risk in women is mostly due to the shortness of the female urethra. Urinary tract infections (UTI) associated with urinary catheters is the leading cause of secondary nosocomial bacteremia. Approximately 20 percent of hospital-acquired bacteremias acquired due to catheter associated urinary tract infection and the mortality associated with this condition is about 10 percent (Gould, 2010).

Most UTIs are caused by gram-negative bacteria, most commonly *Escherichia coli* or species of *Klebsiella*, *Proteus*, *Pseudomonas*, or *Enterobacter*, although other strains, such as *Staphylococcus* and *Serratia*, are emerging. About 70% urinary tract infection is caused by *E.coli* in females when compared to other organisms.

UTI may be asymptomatic but is usually characterized by urinary frequency, burning pain with voiding, and, if the infection is severe, visible blood and pus in the urine present. Fever and back pain often accompany kidney infections. Many of these organisms are part of the patient's endogenous or normal bowel flora or are acquired through cross contamination by patients or hospital personnel or through exposure to non sterile equipment. Most of these (at least 80%) follow some type of invasive procedures or instrumentation of the urinary tract, usually catheterization. (Brenda, et.al., 1996)

Diagnosis of the cause and location of the infection is made by physical examination of the patient, microscopic examination and bacteriologic culture of a urine specimen, and, if necessary, various radiologic techniques such as retrograde pyelography or cystoscopy can be done. Treatment includes antibacterial, analgesic, and urinary antiseptic drugs and increased fluid intake up to 3L/day, unless contraindicated. Teaching the patient about increased fluid intake, frequent voiding, void immediately after sexual intercourse, avoid using irritating feminine products and good perineal hygiene is also helpful.

When urinary tract infections left untreated, it lead to serious consequences like recurrent infections, especially in women who experienced two or more UTI's in a six month periode or four or five within a year. Permanent kidney damage, pyelonephritis, urethral narrowing, sepsis.

A catheter is defined as a drainage tube that is inserted into the bladder through the urethra, is left in place, and is connected to a closed drainage system. The catheter is sometimes called a "Foley catheter" or indwelling urinary catheter. Straight in-and-out catheterizations are not included in Catheter Associated Urinary

Tract Infection (CAUTI) surveillance. Suprapubic catheters and other urological diversions are also not included in CAUTI surveillance (Siegel, 2006)

Catheter associated infection refers to infection occurring in a person whose urinary tract is currently catheterized or has been catheterized within the previous 48 hrs. Urinary Tract Infection refers to significant bacteriuria in a patient with symptoms or signs attributable to the urinary tract. Asymptomatic bacteriuria (ASB) refers to significant bacteriuria in a patient without symptoms or signs attributable to the urinary tract. Bacteriuria is a non- specific term that refers to UTI and ASB combined. In the urinary catheter literature, Catheter associated bacteriuria is comprised mostly of Catheter Associated Asymptomatic Bacteriuria (CA-ASB) (Pappas, 2009).

Perineal care which includes the cleaning of external genitalia and anus should be performed daily. The procedure promotes cleanliness and prevents infection. It also removes irritating odorous secretions on the inner surface of the labia. For the patient with skin breakdown frequent cleaning is needed. Always use the front to back manner in cleaning the perineum. (Lippincott 2011)

A cleansing solution is necessary to remove debris and to promote hygiene in perineum. Improper cleaning lead to infection and complications in both pregnancy and puerperium. Improper handling of catheter lead to blockage of the tube. The cleaning solution used for cleaning the perineum include betadine, hydrogen peroxide, normal saline, soap and water, savlon and chlorhexidine gluconate (Jones Walton, 2005)

Povidone-iodine is a broad spectrum antiseptic for topical application in the treatment and prevention of infection. It reacts with components of cytoplasmic

membrane (surfactant compounds alcohol) and causes denaturation of cellular protein. It also reacts with thiol (-sh) groups of enzymes that damage to RNA&DNA.

Chlorhexidine is the antimicrobial topical solution using for cleaning perineum and surgical sites. This agent is bacteriostatic, where as at higher concentration it is bacteriocidal. It acts with the Cationic Chlorhexidine molecules with negatively charged bacterial cell wall and causes instant absorption of Chlorhexidine to phosphate containing compounds. It further binds with the phospholipids in the inner cell membrane causing cell membrane integrity and causes Leakage of the less molecular weight component.

1.1 Need for the Study

Infections associated with urinary catheters occur in both endemic and epidemic circumstances; common source of outbreaks are infrequent, although an estimated 15% of endemic infection occur in clusters, mainly due to cross infection. Most UTIs- whether endemic or epidemic are asymptomatic and removal of catheter is usually curative. The usually benign nature of catheter- associated UTIs are easily treated by antibiotic and it inhibits the aggressive measures for their prevention and recognition. (Schaberg, et. al.,1980)

Most hospital-acquired UTIs are associated with catheterization, and most occur in patients without signs or symptoms referable to the urinary tract. CA-bacteriuria is the most frequent health care associated infection worldwide, accounting for up to 40% of hospital-acquired infections in US hospitals each year (Haley, 2004)

According to WHO surveillance, 75,000 maternal death occur world wide out of which ranges between 4% and 50% occur due to postpartum complications. The

WHO multi country survey showed the rate of complications after Caesarean-section differ from country to country. In south Asia it ranges from 45% - 78%.

More than 30 million Foley catheters are inserted annually in the United States, and these catheterization procedures probably contribute to 1 million CAUTIs. Estimation showed that the patients catheterized at any one time have ranged from 10% in acute care hospitals, to 7.5% to 10% of patients in long-term care facilities, to a more recent estimate of 25%. Reasons for this increased use of catheterization include complexities of care, increased acuity, severity of illness and decreased staffing levels (Kunnin, 2004)

UTI is a main cause of secondary bloodstream infections, responsible for 0.5% to 4% of these infections. Males develop secondary bacteremia twice as often as females. Although mortality is generally associated with bacteremia, one study found that bacteriuria was associated with an almost threefold higher chance of dying than for patients without bacteriuria (Stephan, 2006)

From a broad epidemiological surveillance, the problems of catheter associated infections takes priority. Each year, 3 to 6 million of the 33 million patients admitted to acute care hospitals receive indwelling catheters. It has been estimated that about 15 to 25% of patients in general hospitals have a catheter inserted sometime during their stay & that prevalence of urinary catheterization has increased over recent decades. The problem encountered in many different medical specialties is probably due to local practice patterns & geographical differences. 52.4% of the patients received indwelling catheters and the incidence of catheter related UTI was 13%. (Langley, et.al, 2010)

According to recent National Nosocomial Infections Surveillance (NNIS) system report, nosocomial UTIs rates ranged from 0.5 to 12.7 per 1000 urinary catheter – days in intensive care patients. (NNIS report, 2002).

In India, urinary tract infection has got many mortality and morbidity. Incidence of UTI in India is higher in women than men, 40% to 50% of whom will suffer at least one clinical episode during their lifetime. The increase risk factor for UTI in women may be due to short urethra, absence of prostatic secretions, pregnancy and easy contamination of urinary tract with faecal flora. Approximately 90% of pregnant women develop ureteral dilation, which will persist until delivery. And it may contribute to increased urinary stasis and ureterovesical reflux. Additionally, the physiological increase in plasma volume during pregnancy decreases urine concentration and up to 70% of pregnant women develop glycosuria, which is considered to encourage bacterial growth in the urine. Thus UTIs are the most common bacterial infections during pregnancy, with pyelonephritis being the most common severe bacterial infections complicating pregnancy and continues to complicate during puerperium. Among the pregnant women approximately 4% to 10% will have asymptomatic bacteriuria (ASB), and 1% to 4% will develop acute cystitis and 1% to 2% may develop severe acute pyelonephritis during the second half of pregnancy (International journal of pure and applied zoology 2013)

The number of mothers suffered post partum complications after caesarean section reported in Madurai and a few extension of cases had risen by at least 40 percent in 2008 (January – October)when compared with the numbers during the corresponding period in 2010 and 2013.The data procured under the Right to Information act (RTI) revealed. According to the data available period between 2010 and 2013(upto to July) point 119 mothers are the victims of post partum

complications against 85 mothers were infected with urinary complication after C-section. And the maternal death stood at 7,744 upto July. (The Times of India 2013)

Daily cleaning of perineum during post partum with soap and water and after with chlorhexidine reduces the level of urinary tract infection and its complication rate. (William C Oppenheim et al .,2013)

Many investigations have shown high frequency of inappropriate and unjustified use of urinary catheters, especially in older, female patients. Inappropriate urinary catheter use in acute care hospitals has been reported to range from 21% to greater than 50%. It is estimated that 30% of all Foley catheters are inserted for surgical purpose. (Hazelett., 2006)

If urinary catheters were used only when it needed and in appropriate situation, the theoretical risk of UTI will reduce and also that the actual UTI rates will decrease. Exposure to a urinary catheter is the major risk factor for acquiring infection. Duration of catheterization is the secondary risk factor. The best method to create the safest patient situation would be to avoid unnecessary catheter use and to use appropriate catheters for a shorter duration whenever indicated (Daniel, et. al., 2005)

Manashi, Monisha (2016) conducted a study on effectiveness of betadine Vs normal saline in catheter care for prevention of catheter associated urinary tract infection in Guwahti. A quasi experimental design was adopted and purposive sampling technique was done for selecting the samples. The study results revealed that in normal saline group 85% (17) were found to be effective whereas 15%(3) patients found to be ineffective and in the betadine group 100%(20) patients were found effective. There was significant difference in the effectiveness of normal saline

and betadine in preventing catheter associated urinary tract infection at 0.05 level of significance.

A clinical trial study using different solutions on cleaning perineum among female patients in which chlorhexidine is effective in treating urinary tract infection with others like soap and water, betadine, antiseptic solution and normal saline. (Saint, et. al., 2005)

During the clinical postings in Obstetrics and Gynaecology block at Government Rajaji hospital Madurai , including the post operative caesarean ward , the investigator noticed that majority of the patients in caesarean ward are having urinary catheters. It induced a curiosity in the investigator to have a look on the urinary catheter and its indication as well as the complication etc. Moreover the investigator did a mini assessment on incidence of UTI among patients with indwelling catheter and it motivates to find a solution which will reduce the problem or prevent the complications of UTI.

1.2 Statement of the Problem

“A study to evaluate effectiveness of betadine Vs chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward at Government Rajaji hospital, Madurai-20”.

1.3 Objectives of the Study

1. To assess the level of urinary tract infection among mothers with indwelling catheters in post operative caesarean ward at Government Rajaji hospital, Madurai.

2. To evaluate the effectiveness of betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.
3. To compare the effectiveness between betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.
4. To associate the level of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward with their selected socio demographic variables and obstetric variables.

1.4 Research Hypothesis

H₁ : There is a significant difference between pre and post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₂ : There is a significant difference between post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₃ : There is a significant association between the level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II with their selected socio demographic and obstetrical variables.

1.5 Operational Definition

Effectiveness: In this study effectiveness refers to the outcome of Betadine perineal care or Chlorhexidine perineal care among mothers with indwelling catheter which was measured through Modified urinary tract infection symptom and analysis scoring system.

Betadine perineal care: In this study betadine perineal care refers to the cleaning of genitalia with a topical microbial solution of 5 % povidone iodine twice daily (15-20 minutes) for 3 consecutive days for mothers with indwelling catheter in interventional group I.

Chlorhexidine perineal care: In this study chlorhexidine perineal care refers to the cleaning of genitalia with a antiseptic solution of 0.2% chlorhexidine gluconate twice daily (15-20 minutes) for 3 consecutive days for mothers with indwelling catheter in interventional group II.

Urinary tract infection: In this study urinary tract infection refers to caesarean mothers with indwelling catheter have signs of temperature, frequency of micturation, supra pubic tenderness, pus discharge from urethra, cloudy urine, bad odor and it is measured by Modified urinary tract infection symptom and analysis scoring system and the sample of urine is investigated in microbiology lab.

Patients with indwelling catheter: In this study it refers to the post caesarean mothers who is having indwelling catheter in situ for 24-72 hours.

Post operative caesarean ward: In this study it refers to mothers who undergone caesarean section and received in post operative caesarean ward at Government Rajaji Hospital, Madurai.

1.6 Assumptions

This study assumed that

Caesarean mothers having indwelling catheter have varying level of urinary tract infection and it will be differs from one mother to another mother.

1.7 Delimitation

1. The study is limited to caesarean mothers admitted in post operative caesarean ward.
2. The study is limited to 4-6 weeks.

1.8 Projected Outcome

- ❖ The study would help to identify the occurrence of urinary tract infection among mothers with indwelling catheter,
- ❖ Betadine or chlorhexidine perineal care helps to reduce urinary tract infection among mothers with indwelling catheter.

*REVIEW OF
LITERATURE*

CHAPTER –II

REVIEW OF LITERATURE

Review of literature is a key step for research process. It refers to the extensive, exhaustive and systemic examination of the publications relevant to the research project.

According to **Polit and Hungler (1999)** researcher almost never conduct a study in the intellectual vacuum, their studies undertaken within the context of an existing base of knowledge. Researchers generally undertake a literature review to familiarize them about the topic under the study.

This chapter deals with the selected studies, which are related to the objectives of the proposed study. a review of research and non-research literature relevant to the study was undertaken, which helped the investigator to develop deeper insight into the problem and gained information on what has been done on the past.

PART-I

Review of Literature

2.1 Literature related to catheter associated urinary tract infection

2.2 Literature related to effectiveness of betadine perineal care on urinary tract infection.

2.2 Literatures related to the effectiveness of chlorhexidine perineal care on urinary tract infection.

PART-II

Conceptual Frame Work

PART-I

2.1 Literature related to Catheter Associated Urinary Tract Infection

Crouzet.et.al.,(2017) conducted a prospective time sequence, non-randomized intervention study on duration of urinary catheterization an impact on catheter – associated urinary tract infection at university hospital, Philadelphia. 300 patients were included in the study who met inclusion criteria. The study results revealed that the frequency of CAUTI decreased from 10.6 to 1.1 per 100 patients ($P=0.03$) and the incidence of late CAUTI decreased from 12.3 to 1.8 ($P=0.03$). The author concluded that increased duration of catheterization increased the rate of catheter associated urinary tract infection.

Alyson W. Black (2014) conducted a quasi- experimental study on prevention bundle for catheter associated urinary tract infection at CCU, Danbury hospital, America. 164 samples were selected who fulfill the inclusion criteria. Sample size was based on number of catheter days for all patients combined and the corresponding CAUTI incidence rate. Consecutive sampling was adopted. Wilcoxon signed rank test was to compare CAUTI rates between the pre- and post – intervention periods. Results were not statistically significant, with $p=0.285$, however results were clinically significant. There was a 59% reduction in CAUTI incidence.

Meltem Isikgoz (2013) conducted a point prevalence survey on hospital acquired urinary tract infection at public tertiary care hospitals, Turkey. Among 26534 patients in 51 hospitals 483 where selected who fulfill the inclusion criteria. The samples were divided into two groups with and without urinary catheter. The survey was conducted on 2011 based on all the nasocomial UTI cases who were present at the ward. The data was collected by using questionnaire. The study results

reveal that the prevalence of UTI was 1.82% (n=483, 95% CI 1.819-1.822) and with a range between 0.00-5.26% among the individual hospitals.

Conterno.et.al.,(2011) conducted a prospective study on use of urinary catheters among hospitalized patients in which 254 patients were included. Purposive sampling was adopted .The findings showed that 14% of hospitalized patients received urinary catheter and had more urinary tract infections (p=0.003) and increased hospital stay (11.9, 8.9 days and p< 0.001).

Bryan.et.al.,(2009) conducted a cohort study on hospital acquired bacteraemic urinary infection: Epidemiology and Outcome in 40 hospitals at south Africa among 2631 samples. The result indicated that between 75 and 80% of all healthcare associated UTIs follow the insertion of a urinary catheter and around 26% of all hospitalized patients have a urinary catheter inserted during their stay in hospital.

Schumm.et.al.,(2008) conducted a quasi-experimental study on ureteral catheters for management of short term voiding problems in hospitalized adults in Canada. 254 samples were included in the study who fulfill the inclusion criteria. Purposive sampling was used to assign the samples. Short term catheterization was defined upto 14 days and the catheter were impregnated with antiseptics. The results showed that there was significantly reduce the incidence of asymptomatic bacteraemia (RR 0.89.95% CI 0.68-1.15, p= 0.02) in hospitalized adult catheters of < 1 week.

Paul.et.al.,(2004) conducted a prospective study on Catheter-Associated Urinary Tract Infection (CAUTI). The sample size was 235 cases of nosocomial CAUTI were included in this study. The study result showed that more than 90% of the patients were asymptomatic and only 123 patients produce symptoms. There were no significant differences between patients with and without CAUTI in signs or

symptoms commonly associated with urinary tract infection—fever, dysuria, urgency, or flank pain—or in leukocytosis(OR=0.13; 95%.CI 0.08 to ;p<0.001)

Harman.et.al.,(2007) conducted a descriptive study on rate of urinary tract infections in postpartum period at selected hospitals in Chandigarh. 200 post partum mothers were included in the study. The findings revealed that increased risk for post-partum UTI was associated with caesarean delivery (odds ratio 2.70; 95% confidence interval, 2.27 – 3.20 and tocolysis [adds ratio, 3.30; 95% confidence interval, 2.15-5.06] also contributed to maternal risk of acquiring a UTI, included renal disease [adjusted odds ratio 3.89; 95% confidence interval 1.80-8.41] and pre-eclampsia – eclampsia [Adjusted odds ratio 3.21; 95% confidence interval 2.36-4.38] and the length of hospital stay was significantly associated with UTI.

2.2 Literatures related to effectiveness of Betadine perineal care on urinary tract infection

Isha Sharma (2016) conducted a study on effectiveness of normal saline versus betadine catheter care on catheter associated urinary tract infection at Mullana. Non equivalent control group design was used. 54 catheterized female patients were included in the study. In both the groups catheter care was given both the groups consecutively for 3 days. The result showed that there was no significant difference in experimental and comparison group in terms of occurrence of CAUTI and the p value was found to be > 0.05 i.e. also there is a significant association of co-morbid illnesses and soiled urinary catheter with the occurrence of CAUTI. The study concluded that Betadine is effective in the prevention of CAUTI amongst female catheterized patients.

Dolph.et.at.,(2010) conducted a surveillance study on the surgical site infection [SSI] and UTI after LSCS on 37,074 deliveries in the year of 2010 at general

hospital New Delhi and they adopted multiple logistic regression models to estimate risk – adjusted post – cesarean delivery infection odds ratios. They concluded 48% in the SSI rate and 52% in the UTI rate were served in the maternity units.

Littleton and Sally (2008) conducted a meta-analysis study on use of povidone iodine on catheter associated urinary tract infection. Overall 1905 articles were analyzed. The results revealed that by comprising two prospective cohort studies using retrospective control groups (evidence level II-III) and two randomized two randomized control trials. 0.35% povidone – iodine (PVP-I) was used in the three of these of these studies and a solution of 6.25 % PVP –I for cleaning catheter after caesarean section. All the study suggest that use of povidone - iodine were effective in preventing urinary tract infection

Shin.et.al.,(2008) conducted a quasi-experimental study to compare the effects of meatal care with 10% betadine or with normal saline on the incidence of urinary tract infection for elderly clients with indwelling urinary catheter in the ICU. A non equivalent control group design was used. The 37 patients who participated in this study were 65yr old or older. Patients in the normal saline group (n=20) received meatal care with normal saline and those in the betadine group (n=17) received meatal care with 10% betadine once a day for 6 days. A urine culture was done on the 7th day for both groups to detect UTIs. No difference was observed in the incidence of urinary tract infection between the two groups regardless of patient's gender, ability to communicate or history of operation. The results indicated that use of saline and batadine were significantly reduce the incidence of UTI ($p < 0.05$) for elderly clients with indwelling urinary catheter in the ICU. The study concluded that cleaning meatal with betadine is effective in reducing the urinary tract infection among elderly patients.

Jacobson.et.al., (2003) conducted a study on effect of daily meatal care with polyantiseptic solutions and betadine in prevention of urinary catheter associated bacteraia at California. Randomized clinical trial was adopted. 846 subjects were randomized to receive (1) twice-daily meatal care comprising cleansing with a chlorhexidine solution and application of a chlorhexidine ointment, group I (2) once-daily meatal cleansing with a polyantiseptic solution group II (3) no special meatal care group III. The study shows that group I were (MD -6.01; 95% CI -6.68, -5.35), group II were (MD -16.81; 95% CI -17.31, -16.31), group III (MD -1.10; 95% CI -3.32, 1.12). The study concluded that there was statistically significant, indicating an unexpectedly higher risk of bacteriuria among patients randomized to no meatal care with an once-daily meatal cleansing with a polyantiseptic solution as compared to those managed with twice-daily meatal care comprising cleansing with a chlorhexidine solution and application of a chlorhexidine ointment at the level of significance of $p < 0.001$

2.3 Literatures related to the effectiveness of Chlorhexidine perineal care on urinary tract infection

Brett G Mitchell.et.at., (2017) conducted a randomized controlled trial on reducing catheter – associated urinary tract infections at 3 large Australian hospitals over a period of 32 weeks. Among 150 patients 80 was selected who fulfill inclusion criteria. Purposive sampling was used to assign the samples in groups. Cross over design was used with intervention of chlorhexidine (0.1%) and normal saline for cleaning of perineum. The results revealed that the number of cases of catheter associated asymptomatic bacteriuria for 100 catheter days was analysed and found to be effective in reducing the catheter associated urinary tract infection of 67% in chlorhexidine and 33 % of normal saline.($p = 0.001$).

Ihnsook.et.al., (2010) conducted a comparative study on catheter associated urinary tract infection rates by perineal care agents in ICUs. Aim of this study is to compare the catheter-associated urinary tract infection (CAUTI) rates resulting from the use of four perineal care agents (soap-and water, chlorhexidine, warm water, and normal saline) among patients in intensive care units (ICUs) and surgical unit. Experimental study was done with 97 female patients who had urinary catheters over 2 days in ICUs and surgical unit. The patients received one of the four types of perineal care. Data collected included the incidence of UTI at baseline prior to perineal care, 1 week, 2 weeks, and 4 weeks after beginning perineal care. The result showed that the cumulative incidence of CAUTIs per 100 urinary catheter days were 3.18 episodes during 1 week with urinary catheter, 3.31 during 2 weeks, and 3.04 during 4 weeks. There is a significant difference in the cumulative indices of CAUTI by agents (OR= 1.6917, P =.6552)

Al-Farsi.et.al.,(2009) conducted a study on Prospective randomized control trail to compare urinary infection rate in clients cleaned with chlorhexidine versus sterile water on bladder catheterization at surgical unit, Dehradun. The participants were randomly assigned to two groups in which sterile water or chlorhexidine was used for peri-urethral cleaning. The sterile water group had 92 patients and the chlorhexidine group had 94. The result showed Urine culture was positive in 16% of clients in the sterile water group and in 18% in the chlorhexidine and there was no significant association between solution preparation and cultures on univariate regression analysis at the level of significance $p < 0.05$. The study concluded that the periurethral cleaning with chlorhexidine catheterization in not inferior to cleaning with sterile water.

Burke.et.al., (2008) conducted a quasi-experimental study to evaluate the effectiveness of daily cleansing of the urethral meatus-catheter junction in preventing bacteriuria during closed urinary drainage using perineal care agents. Randomized controlled trial was adopted. In 32 (16.0 percent) of 200 patients given twice daily applications of a chlorhexidine solution, as compared with 24 (12.4 percent) of 194 patients not given this treatment. The study found that each of four different statistical methods indicated that the rates of bacteriuria were higher in the untreated groups than in the treated groups. There is a statistical difference in use of chlorhexidine with the rate of UTI (RR 0.10; 95% CI 0.02, 0.57 P= 0.05).

Veiga.et.al., (2008) conducted a study on comparing Chlorhexidine and CHG in alcohol for perineal care among patients with indwelling catheter. Randomized controlled trial was utilized. Out of 130 patients, 65 samples were allocated for each group. The study results shows that chlorhexidine group were (MD -16.81; 95% CI -17.31, -16.31) and CHG with alcohol were (MD -1.10; 95% CI -3.32, 1.12). The study concluded that statistical difference between the solutions, and a prefer for CHG in alcohol has superior effect because of its residual effect (p=0.05).

PART-II

CONCEPTUAL FRAME WORK

The investigator adopted Modified Imogene King's Goal Attainment theory (1981) based on the personal and interpersonal systems including interactions, perception, judgement, action, reaction, reaction, and transaction. The investigator adopted goal attainment as a basic theory for conceptual framework, which is aimed at effectiveness of betadine and chlorhexidine perineal care among caesarean mother with indwelling catheter. This involves the interaction between the researcher and the mother with indwelling catheter.

Six major concepts describe these phenomena:

Perception

Perception is the process in which the data obtained through the senses and from memory are organized, interpreted, and transformed.

In this study the researcher perceived the need for perineal care among mothers with indwelling catheter and mother perceived the importance and benefit for perineal care.

Judgment

Judgment refers to changing and orderly process through which choices related goals are made with identified possible activities by individual or group and actions are taken to move towards the goal.

In this study the researcher decided to give perineal care among mothers with indwelling catheter and mothers decide to accept the perineal care.

Action

Action as a sequence of behaviors involving mental and physical action. The sequence is first mental action to recognize the presenting conditions; then physical action to begin activities related to those conditions; and finally, mental action in an effort to exert control over the situation, combined with physical action seeking to achieve goals.

The researcher action is plan to collect the socio demographic variables and assess the level of urinary tract infection by modified urinary tract infection symptom and analysis scoring system and action of the mother is accept and ready to participate in nursing action.

Reaction

Reaction is considered to be included in the sequence of behaviors described in action and also it helps in setting a mutual goal.

In this study the researcher and the mother set a mutual goal. Here the researcher and the mothers plan to reduce the level of urinary tract infection during immediate post-operative period.

Interaction

Interaction is a process of perception and communication between person and environment and between the person and it is represented in the way of verbal and nonverbal communication to achieve the goal.

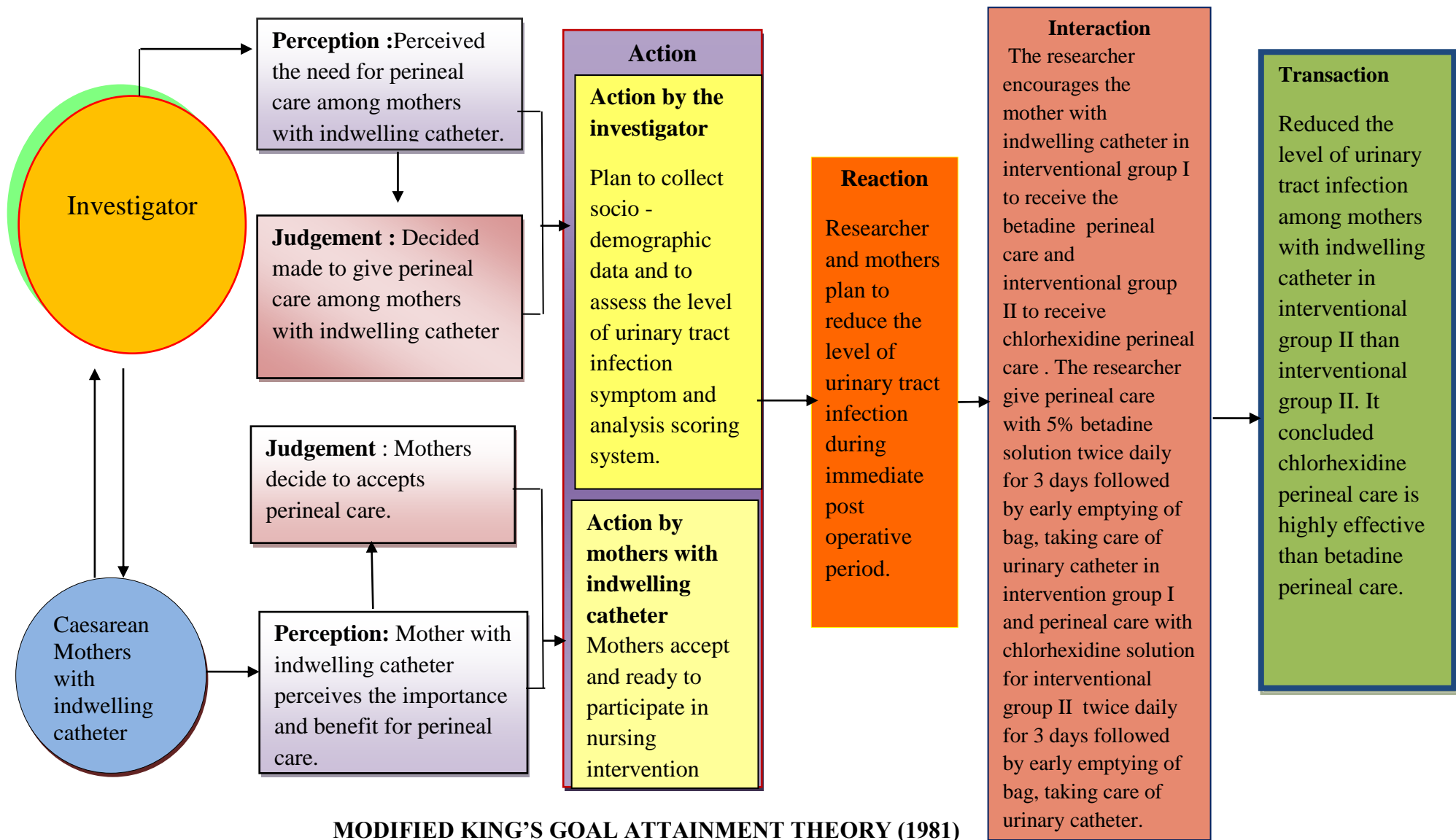
In this study the researcher encourages the mother with indwelling catheter in interventional group I to receive the betadine perineal care and interventional group II to receive chlorhexidine perineal care . The researcher give perineal care with 5% betadine solution twice daily for 3 days followed by early emptying of bag, taking

care of urinary catheter in intervention group I and perineal care with chlorhexidine solution for interventional group II twice daily for 3 days followed by early emptying of bag, taking care of urinary catheter.

Transaction

Transaction is a process in which human beings achieve the goals with the help of perception, action, reaction, interaction by the way of valued goal directed behavior.

In this study transaction is reduced level of urinary tract infection among mothers with indwelling catheter in interventional group II than interventional group I. It concluded chlorhexidine perineal care is highly effective than betadine perineal care.



METHODOLOGY

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology is a method to solve research problem systematically. The method used to structure a study, to gather and analyze information in a systemic fashion.

(Polit & Beck, 2011)

Research methodology is a pathway by which the researcher intends to solve the problem systematically. It involves the series of procedure in which the investigator starts from initial identification of the problem to its final conclusion.

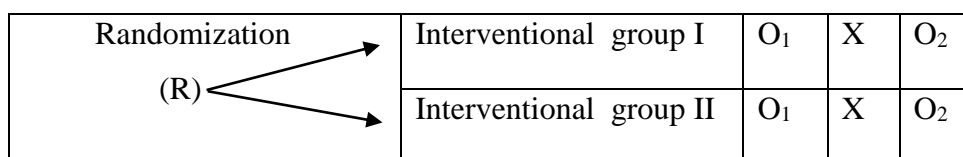
This chapter includes research approach, research design, variables. Description of setting, population, sample, sample size, sampling technique, and criteria for sample selection. It further deals with the development of tool, description of tool, validity, reliability, pilot study and procedure for data collection, plan for data analysis and ethical consideration.

3.1 Research Approach

The researcher adopted quantitative approach.

3.2 Research Design

True experimental- pre test & post test design



R- Random assignment

Intervention group I – Mothers who is receiving betadine perineal care

Intervention group II- Mothers who is receiving chlorhexidine perineal care.

O₁ – Observation before intervention

O₂ – Observation after intervention

X- Intervention

Intervention is betadine perineal care for group I and chlorhexidine perineal care for group II caesarean mothers with indwelling catheter twice daily 15-20 minutes for 3 consecutive days.

3.3 Research Variable

- **Independent variable** : Betadine and chlorhexidine perineal care
- **Dependent variable** : Reducing the occurrence of urinary tract infection
- **Socio demographic variable** : Age, educational status, occupation, place of residence, use of latrine.
- **Obstetric variables**: Parity, previous exposure of catheterization, indications of catheterizations, previous history of urinary tract infection, duration of napkin changing.

3.4 Setting of the Study

The study was conducted in Post operative caesarean ward at Government Rajaji hospital, Madurai. It is the second largest multi speciality hospital in southern Tamil Nadu with 3102 beds and consists of 750 beds exclusive for department of obstetrics and gynaecology and an average of 850 mothers deliver the baby by caesarean section.

3.5 Population

Target population

The target population is caesarean mothers with indwelling catheter.

Accessible population

The caesarean mothers with indwelling catheter in post operative caesarean ward at Government Rajaji Hospital, Madurai.

3.6 Sample

The study sample comprised of Caesarean mothers with indwelling catheter admitted at post operative caesarean ward at Government Rajaji Hospital, Madurai, who fulfill the inclusion criteria for sample selection.

3.7 Sample Size

The sample size of the study comprised of 60 caesarean mothers (30 interventional group I and 30 interventional group II)

3.8 Sampling Technique

The subjects were selected by simple random sampling technique

3.9 Criteria for Sample Selection

Inclusion Criteria

- The caesarean mothers between the age group 18-45yrs.
- The caesarean mothers who are willing to participate in study.
- Caesarean mothers who had urinary catheter in situ for minimum 3 days.

Exclusion Criteria

- Caesarean mothers who had urinary tract infection or any other genitourinary disorders at the time of admission.
- Mothers transfer in from outside hospital.
- The mothers who had temperature above 100⁰ F diagnosed with other causes dengue, typhoid.
- The mothers who are having the bacterial count of < 10⁵ per ml.

3.10 Development and Description of the Tool

It consists of two sections

Section A

Semi structured interview schedule which is prepared by the researcher validated by the experts. It comprises 10 number of items of socio demographic variables such Age, educational status, occupation, place of residence, use of latrine, Parity, previous exposure of catheterization, indications of catheterization, previous history of urinary tract infection, duration of napkin changing.

Section B

Modified Urinary tract infection symptom and analysis scoring system. It consists of 10 items such as temperature, urgency of urination, pus discharge from urethra, cloudy urine, bad odor urine, pus cells, epithelial cells, bacteria, casts, other abnormal cells.

Scoring key

SCORE	LEVEL OF INFECTION
1-3	Mild
4-7	Moderate
8-10	High

3.11 Content Validity

The content validity of the tool was obtained from five experts in the field of nursing and from head of the department of Obstetrics and Gynaecology. Their opinions and valuable suggestions were incorporated in the tool and it was finalized by guide.

3.12 Reliability of the Tool

Reliability of the tool was assessed by using inter rater method. Infection score reliability coefficient correlation value was $r = 0.85$. The reliability test score shows there was stability and consistency in the tool items. Hence the tool was considered highly reliable to the study.

3.13 Pilot Study

The study was conducted after getting the formal permission from ethical committee of Government Rajaji hospital, Madurai -20. The pilot study was conducted in caesarean ward at Government Rajaji hospital, Madurai-20 from 21.05.18 – 27.05.18. The data was collected from the subjects who were willing to participate in the study and who met the selection criteria and obtained consent form from the subjects. Pre test level of urinary tract infection was assessed with Modified urinary tract infection symptom and analysis scoring system, 10 samples were selected through simple random sampling technique – lottery method, samples were assigned to both the groups. Interventional group I received betadine perineal care and Interventional group II received chlorhexidine perineal care for twice a day (15-20 minutes) for 3 consecutive days. The post test carried out using modified urinary tract infection symptom and analysis scoring system 2 days after removal of urinary catheter. Then the collected data was analyzed and interpreted. The paired “t” test value of interventional group I was 4.285 and Interventional group II was 11.19. The value of Interventional group II is greater than that of Interventional group I. This study indicated that the chlorhexidine perineal care is more effective than betadine perineal care. This study is feasible to proceed with main study.

3.14 Data Collection Procedure

The study was conducted after getting the formal permission from ethical committee of Government Rajaji hospital, Madurai -20. The data collection for main study was conducted in caesarean ward at Government Rajaji hospital, Madurai-20 from 04.06.18 – 13.07.18. The data was collected from the subjects who were willing to participate in the study and who met the inclusion criteria and obtained consent form from the subjects. Pre test level of urinary tract infection was assessed with modified urinary tract infection symptom and analysis scoring system, 60 samples were selected through simple random sampling technique – lottery method, samples were assigned to both the groups. Interventional group I received betadine perineal care and Interventional group II received chlorhexidine perineal care for once 3 days. The post test carried out using Modified urinary tract infection symptom and analysis scoring system 2 days after removal of urinary catheter.

3.15 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 procedure to give an organization and gives meaning to the data. Descriptive and inferential statistics used for data analysis.

Descriptive statistics:

- The descriptive statistical analysis include frequency, mean, standard deviation, percentage, was planned for socio demographic variables

Inferential statistics:

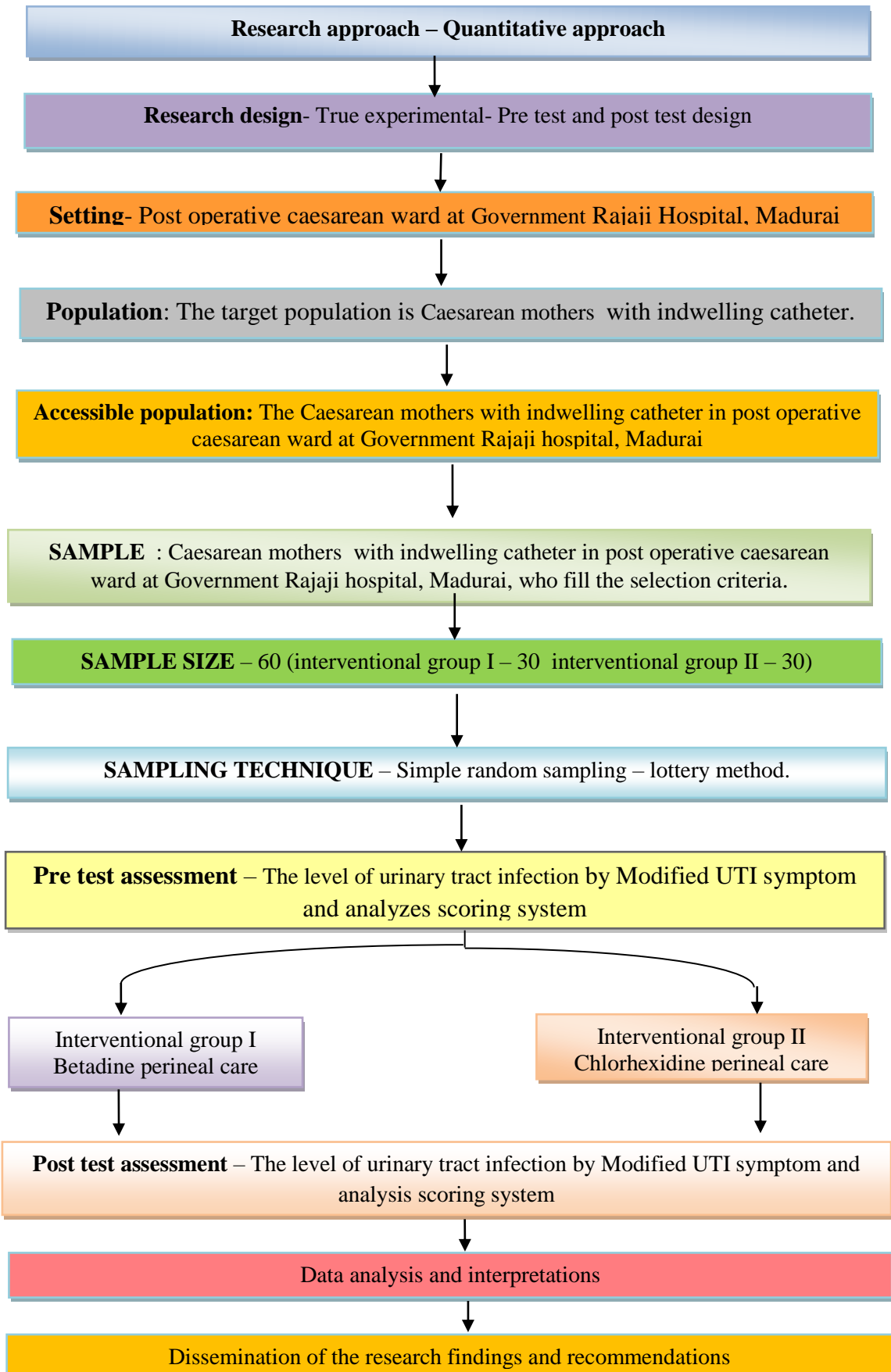
- **Student paired ‘t’** test was planned to find out the effectiveness of betadine perineal care among interventional group I and chlorhexidine perineal care in interventional group II.

- **Mc Nemar's and paired 't'** test was planned to compare the pretest and post test score of betadine perineal care among interventional group I and chlorhexidine perineal care among interventional group II.
- **Chi square** was planned to find out the association between the level of urinary tract infection among interventional group I and interventional group II caesarean mothers with indwelling catheter with their selected demographic variables.

3.16 Ethical Consideration

The proposed study was conducted after the approval of research committee of the college of nursing, Madurai Medical, Madurai-20. In order to protect the human rights, ethical committee approval obtained on the month of May 2018 from ethical committee, Madurai medical college, Madurai. Both verbal and written consent was obtained from all the study subjects and the data collection was kept confidential. The possible benefit of participating in the study was explained to all the samples. Reassurance was given to the study samples, and anonymity was maintained throughout the study.

SCHEMATIC APPROACH OF THE STUDY



*DATA ANALYSIS
AND
INTERPRETATION*

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis of data collected. Analysis refers to breaking a whole into its separate component of individual examination. Statistical procedure enabled the investigator to deduce, summarize, organize, evaluate, interpret and communicate the numeric information.

This chapter deals with analysis and interpretation of data collected from 60 samples that is 30 in interventional group I and 30 in interventional group II to evaluate the effectiveness of betadine Vs chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward at government Rajaji Hospital, Madurai.

Organization of data.

Section I - Distribution of subjects according to their socio demographic variables.

Section II - Distribution of pretest level of urinary tract infection among interventional group I and interventional group II.

Section III - Distribution of post test level of urinary tract infection among interventional group I and interventional group II.

Section IV - Description of effectiveness of betadine perineal care (interventional group I) and chlorhexidine perineal care (interventional group II) among mothers with indwelling catheter.

Section V - Comparison of pre test and post test level of urinary tract infection among interventional group I and interventional group II.

Section VI- Association of post test level of infection among mothers with indwelling catheter in intervention group I and intervention group II with their selected socio demographic variables.

Section-I

Distribution of subjects according to their socio demographic variables among interventional group I and interventional group II.

Table -1

Frequency and percentage distribution of samples according to their socio demographic variables.

n = 60

S. No	Socio demographic variables	Intervention group I (n=30)		Intervention group II (n=30)		χ^2
		f	%	f	%	
1	Age in years					
	< 25	17	56.67	18	60	$\chi^2=0.43$ P=0.81 (NS)
	26-30	11	36.66	9	30	
	31-35	2	6.67	3	10	
	>35	0	0	0	0	
2	Educational status					
	No formal education	6	20	2	6.67	$\chi^2=4.21$ P=0.24 (NS)
	Primary	10	33.34	17	56.67	
	Secondary	13	43.33	10	33.33	
	Graduate	1	3.33	1	3.33	
3	Occupation					
	Homemaker	20	66.67	26	86.67	$\chi^2=4.55$ P=0.21 (NS)
	Coolie	3	10	2	6.67	
	Self employment	6	20	1	3.33	
	Private employee	1	3.33	1	3.33	
4	Place of residence					
	Rural	27	90	26	86.67	$\chi^2=0.16$ P=0.68 (NS)
	Urban	3	10	4	13.33	
5	Use of latrine					
	Personal	12	40	13	43.33	$\chi^2=0.24$ P=0.88 (NS)
	Public	15	50	15	50	
	Open field	3	10	2	6.67	
Obstetric variables						
6	Parity					
	Primi	17	56.67	14	46.67	$\chi^2=0.60$ P=0.43 (NS)
	Multi para	13	43.33	16	53.33	

7	Previous experience of catheterization					
	Yes	16	53.33	17	56.67	$\chi^2=0.07$ P=0.79 (NS)
	No	14	46.67	13	43.33	
8	Indications for catheterization					
	Surgical purpose	24	80	28	93.33	$\chi^2=2.30$ P=0.13 (NS)
	Monitoring purpose	6	20	2	6.67	
9	Previous history of urinary tract infection					
	Yes	13	43.33	11	36.67	$\chi^2=0.28$ P=0.60 (NS)
	No	17	56.67	19	63.33	
10	Duration of napkin changing					
	6 th hourly	12	40	14	46.67	$\chi^2=0.27$ P=0.60 (NS)
	8 th hourly	18	60	16	53.33	
	10 th hourly	0	0	0	0	

The above table 1 reveals the distribution of mothers according to their selected socio demographic and obstetric variables.

In the view of age, in interventional group I majority of the study participants 17 (56.67%) were belongs to less than 25 years, 11 (36.66%) were belongs to age group between 26-30 years, and remaining 2 (6.67%) were belongs to age group between 31-35 years and none of them were belongs to age group more than 35 years. In interventional group II majority of the study participants 18 (60%) were belongs to less than 25 years, 9 (30%) were belongs to age group between 26-30 years and remaining 3 (10%) of them were belongs to age group between 31-35 years and none of them were belongs to age group more than 35 years.

As far the educational status was concerned, in interventional group I majority of the study participants 13 (43.33%) were studied up to secondary education, 10 (33.34%) were studied up to primary education, 6 (20%) had no formal education and remaining 1 (3.33%) were graduate. In interventional group II majority

of the study participants 17 (56.67%) were studied up to primary education, 10 (33.33%) were studied up to secondary education, 2 (6.67%) had no formal education and remaining 1 (3.33%) were graduate.

In the view of occupation, in interventional group I majority of the study participants 20 (66.67) were home maker, 6 (20%) were self employee, 3 (10%) were coolie and remaining 1 (3.33%) were private employee. In interventional group II majority of the study participants 26 (86.67%) were home maker, 2 (6.67%) were coolie, 1 (3.33%) of them were self employee and remaining 1 (3.33%) were private employee.

With regard to the place of residence, in interventional group I majority of mothers 27 (90%) were hailed from rural and remaining 3 (10%) were hailed from urban. In interventional group II majority of mothers 26 (86.67%) were hailed from rural and remaining 4 (13.33%) were hailed from urban.

In the view of use of latrine, in interventional group I majority of the study participants 15 (50%) were used public latrine, 12 (40%) were used personal latrine and remaining 3 (10%) were used open field. In interventional group II majority of the study participants 15 (50%) were used public latrine, 13 (43.33%) of them were used personal latrine and remaining 2 (6.67%) were used open field.

Based on parity, in interventional group I majority of the study participants 17 (56.67%) were primi and rest of the mothers 13 (43.33%) were multi gravid. In interventional group II majority of the study participants 16 (53.33%) were multi gravid and remaining 14 (46.67%) were primi.

About the previous experience of catheterization, in interventional group I majority of the study participants 16 (53.37%) had previous experience of catheterization and remaining 14 (46.67%) had no previous experience of

catheterization. In interventional group II majority of the study participants 17 (56.67%) had previous experience of catheterization and remaining 13 (43.33%) had no previous experience of catheterization.

Comparing the indications for catheterization, in interventional group I majority of the study participants 24 (80%) had surgical reasons and remaining 6 (20%) of them had monitoring purpose. In interventional group II majority of the study participants 28 (93.33%) had surgical reasons and remaining 2 (6.67%) of them had monitoring purpose.

With regard to previous history, in interventional group I majority of the study participants 17 (56.67%) had no previous history of urinary tract infection and remaining 13 (43.33%) had previous history of urinary tract infection. In interventional group II majority of the study participants 19 (63.33%) had no previous history of urinary tract infection and remaining 11 (36.67%) had previous history of urinary tract infection.

Based on the duration of napkin changing, in interventional group I majority of the study participants 18 (60%) had changed 8th hourly, remaining 12 (40%) had changed 6th hourly and none of them had changed 10th hourly. In interventional group II majority of the study participants, 16 (53.33%) had changed 8th hourly, remaining 14 (46.67%) had changed 6th hourly and none of them had changed 10th hourly.

Distribution of subjects according to age

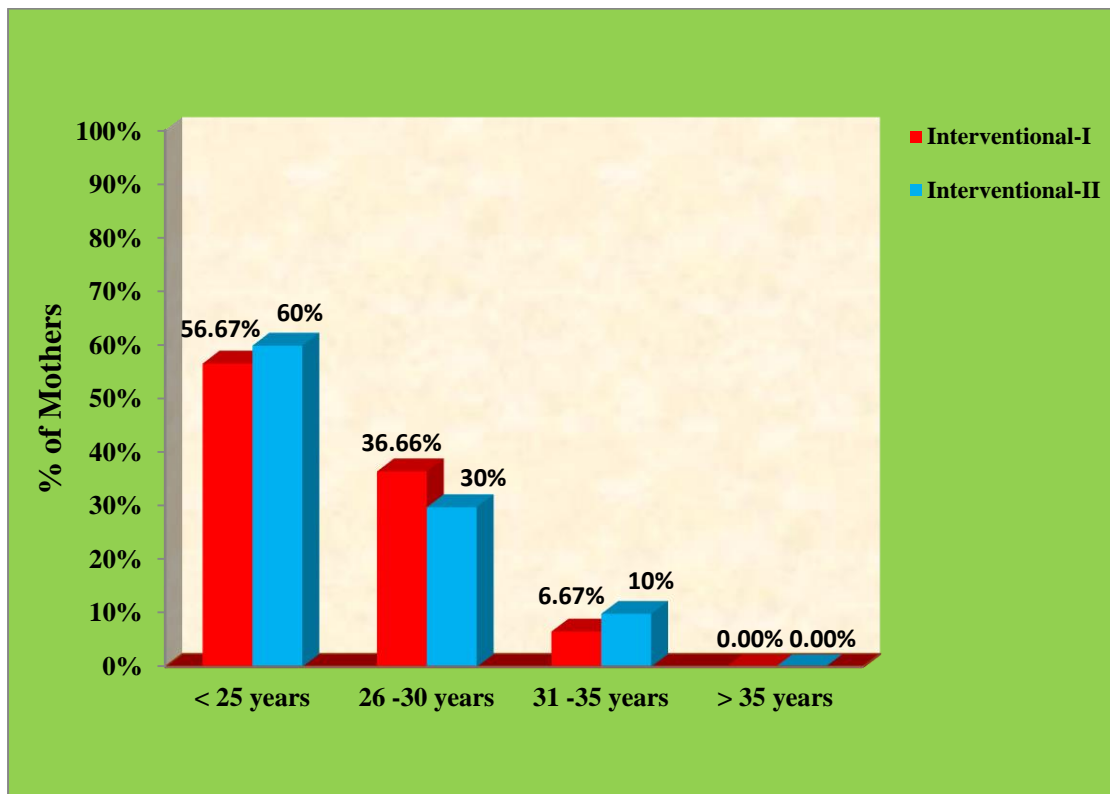


Figure: 2 Multiple bar diagram portrays that distribution of post caesarean mothers according to their age.

In interventional group I majority of the study participants 17 (56.67%) belongs to less than 25 years, 11 (36.66%) were belongs to age group between 26-30 years, and remaining 2 (6.67%) were belongs to age group between 31-35 years and none of them were belongs to age group more than 35 years. In interventional group II majority of the study participants 18 (60%) were belongs to less than 25 years, 9 (30%) were belongs to age group between 26-30 years and remaining 3 (10%) of them were belongs to age group between 31-35 years and none of them were belongs to age group more than 35 years.

Distribution of subjects according to educational status.

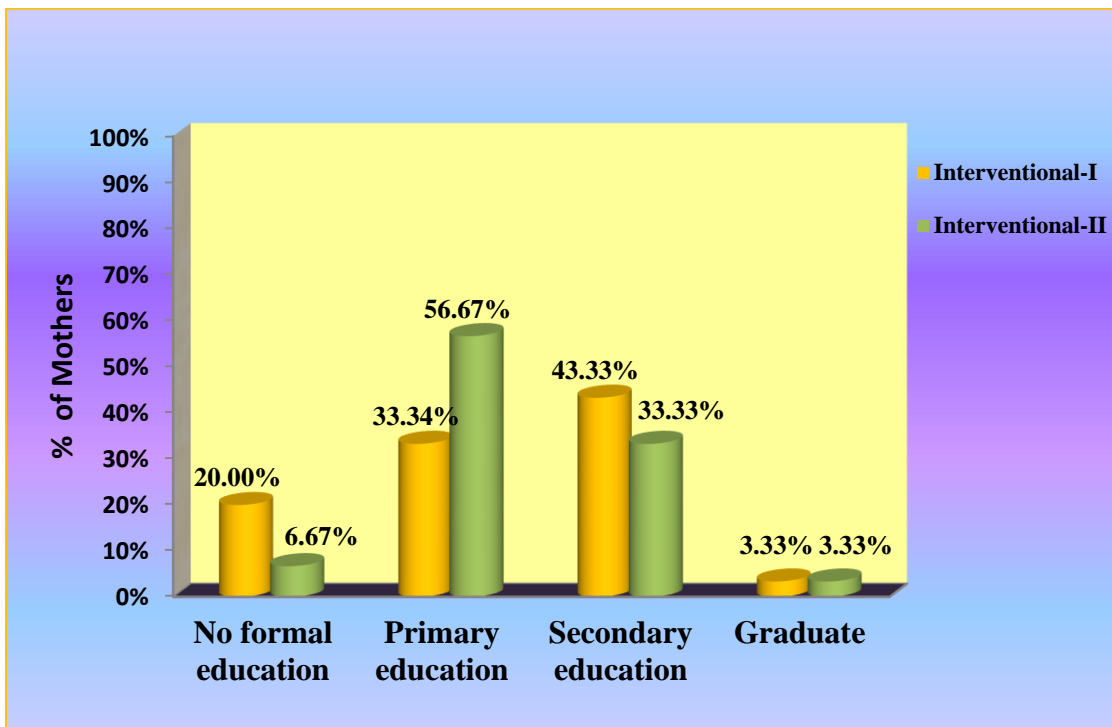


Figure: 3 Multiple cylinder diagram portrays that distribution of post caesarean mothers according to their educational status.

In interventional group I majority of the study participants 13 (43.33%) were studied up to secondary education, 10 (33.34%) were studied up to primary education, 6 (20%) had no formal education, and remaining 1 (3.33%) were graduate. In interventional group II majority of the study participants 17 (56.67%) were studied up to primary education, 10 (33.33%) were studied up to secondary education, 2 (6.67%) had no formal education and remaining 1 (3.33%) were graduate.

Distribution of subjects according to occupation

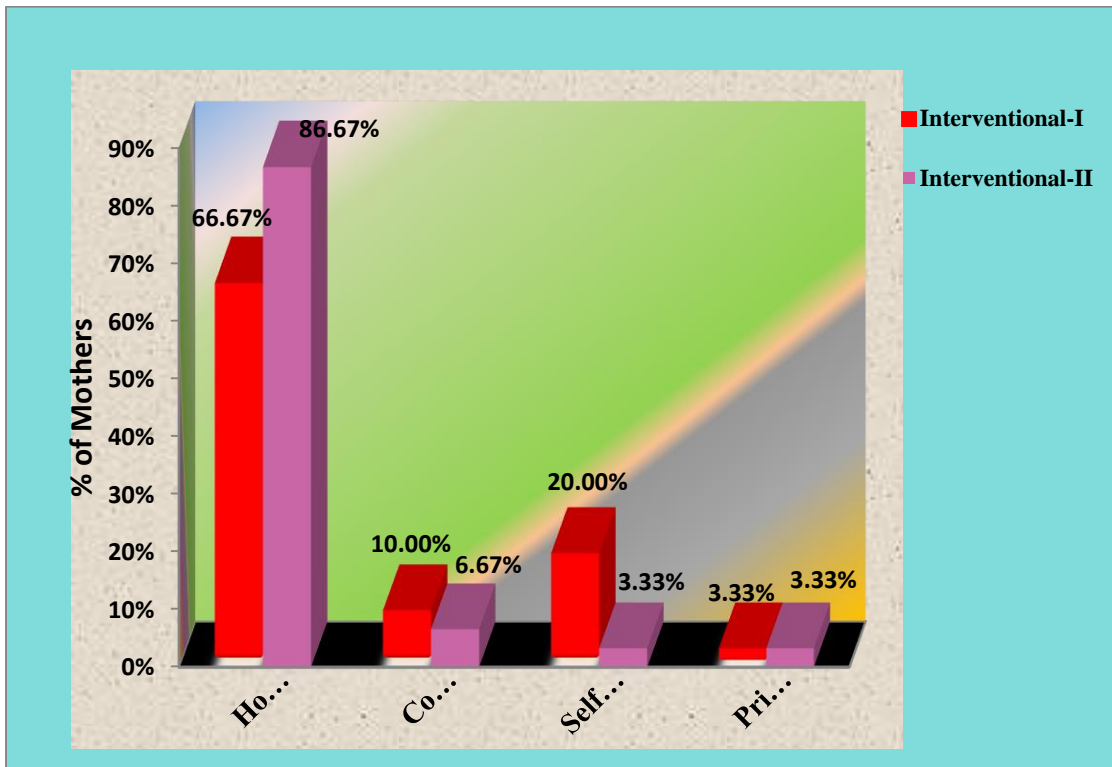


Figure: 4 Multiple bar diagram portrays that distribution of post caesarean mothers according to their occupation.

In interventional group I majority of the study participants 20 (66.67) were home maker, 6 (20%) were self employee, 3 (10%) were coolie and remaining 1 (3.33%) were private employee. In interventional group II majority of the study participants 26 (86.67%) were home maker, 2 (6.67%) were coolie, 1 (3.33%) of them were self employee and remaining 1 (3.33%) were private employee.

Distribution of subjects according to place of residence.

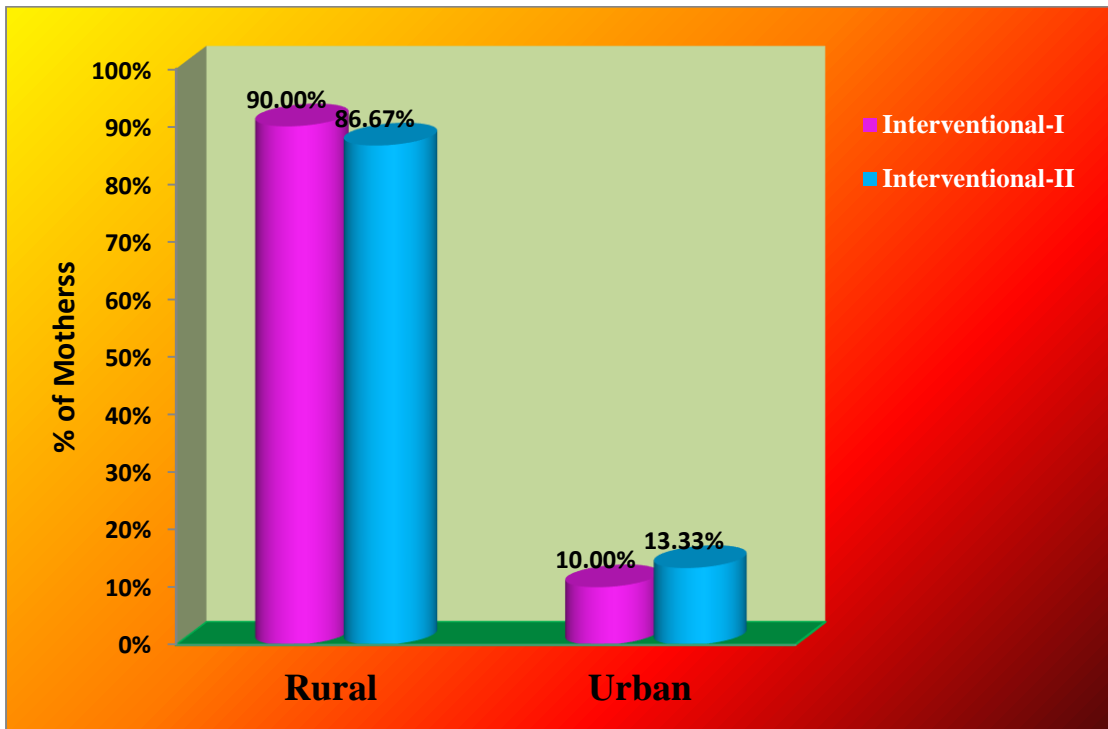


Figure: 5 Multiple cylinder diagram portrays that distribution of post caesarean mothers according to their place of residence.

In interventional group I majority of mothers 27 (90%) were hailed from rural and remaining 3 (10%) were hailed from urban. In interventional group II majority of mothers 26 (86.67%) were hailed from rural and remaining 4 (13.33%) were hailed from urban.

Distribution of subjects according to use of latrine.

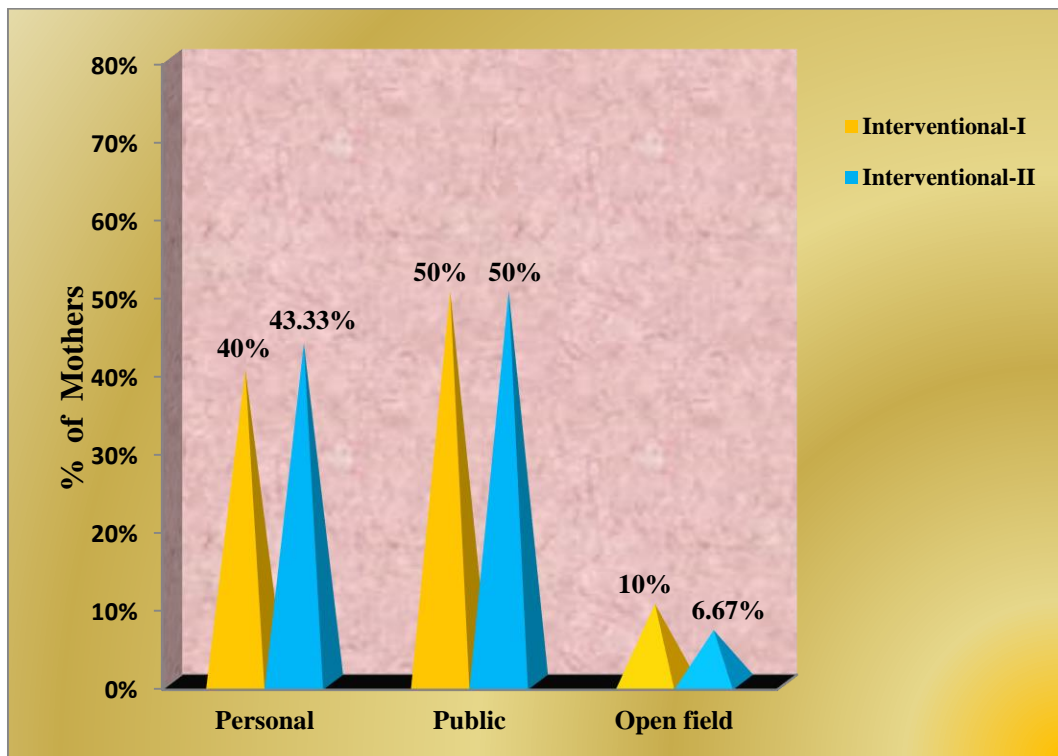


Figure : 6 Multiple pyramid diagram portrays that distribution of post caesarean mothers according to their use of latrine.

In interventional group I majority of the study participants 15 (50%) were used public latrine, 12 (40%) were used personal latrine and remaining 3 (10%) were used open field. In interventional group II majority of the study participants 15 (50%) were used public latrine, 13 (43.33%) of them were used personal latrine and remaining 2 (6.67%) were used open field.

Distribution of subjects according to parity.

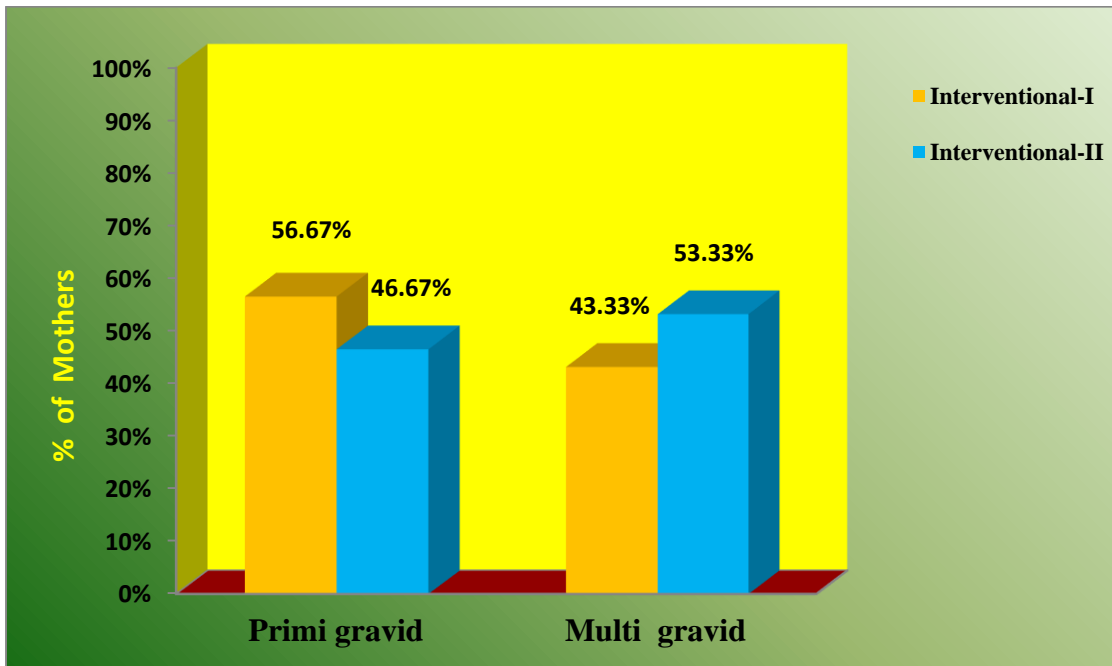


Figure: 7 Multiple bar diagram portrays that distribution of post caesarean mothers according to their parity.

In interventional group I majority of the study participants 17 (56.67%) were primi and rest of the mothers 13 (43.33%) were multi gravid. In interventional group II majority of the study participants 16 (56.67%) were multi gravid and remaining 14 (46.67%) were primi.

Distribution of subjects according to previous experience of catheterization.

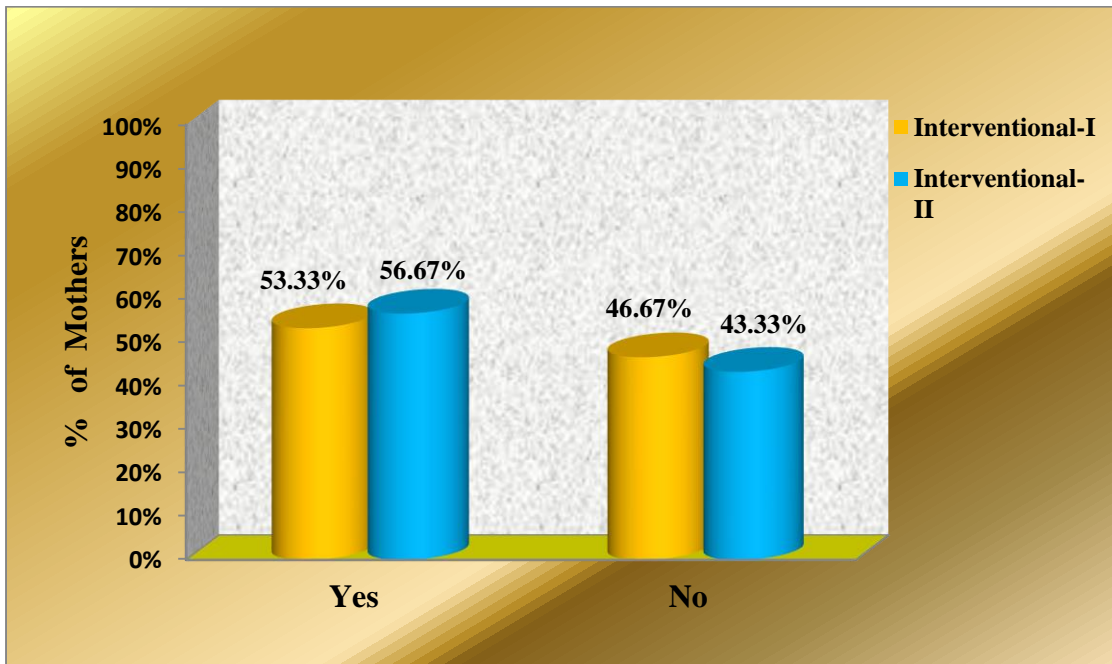


Figure: 8 Multiple cylinder diagram portrays that distribution of post caesarean mothers according to their previous experience of catheterization.

In interventional group I majority of the study participants 16 (53.37%) had previous experience of catheterization and 14 (46.67%) of them had no previous experience of catheterization. In interventional group II majority of the study participants 17 (56.67%) had previous experience of catheterization and 13 (43.33%) of them had no previous experience of catheterization.

Distribution of subjects according to indications of catheterization.

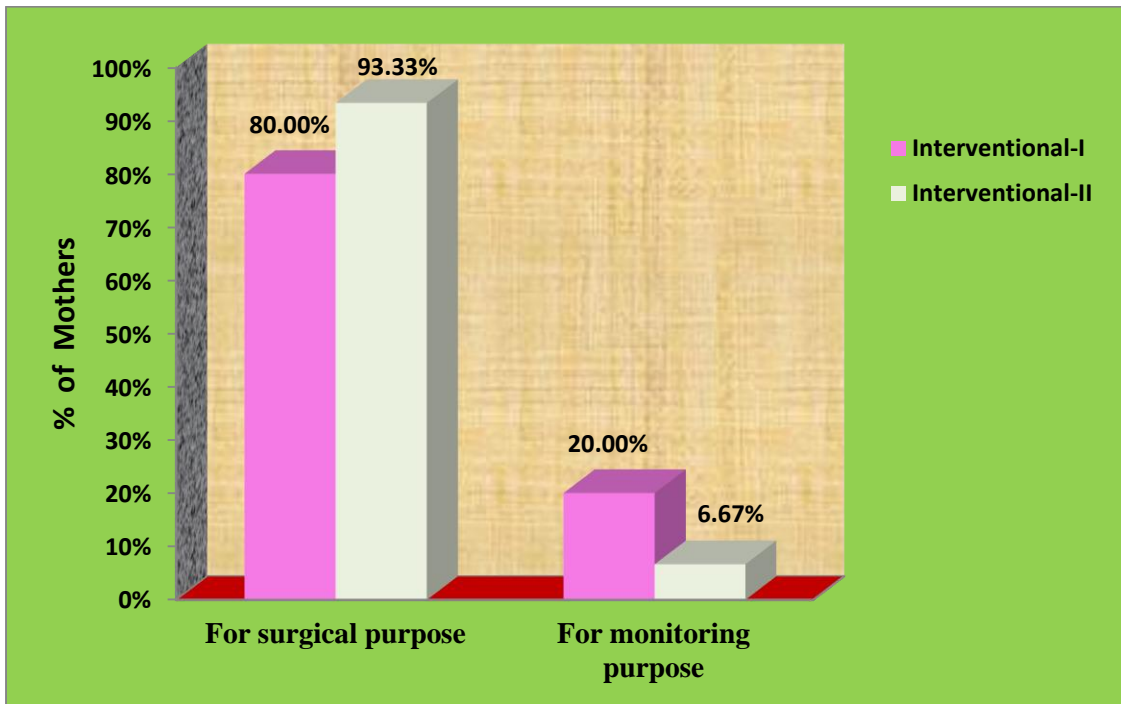


Figure : 9 Multiple bar diagram portrays that distribution of post caesarean mothers according to their indications of catheterization.

In interventional group I majority of the study participants 24 (80%) had surgical reasons and remaining 6 (20%) of them had monitoring purpose. In interventional group II majority of the study participants 28 (93.33%) had surgical reasons and remaining 2 (6.67%) of them had monitoring purpose.

Distribution of subjects according to previous history of Urinary tract infection.

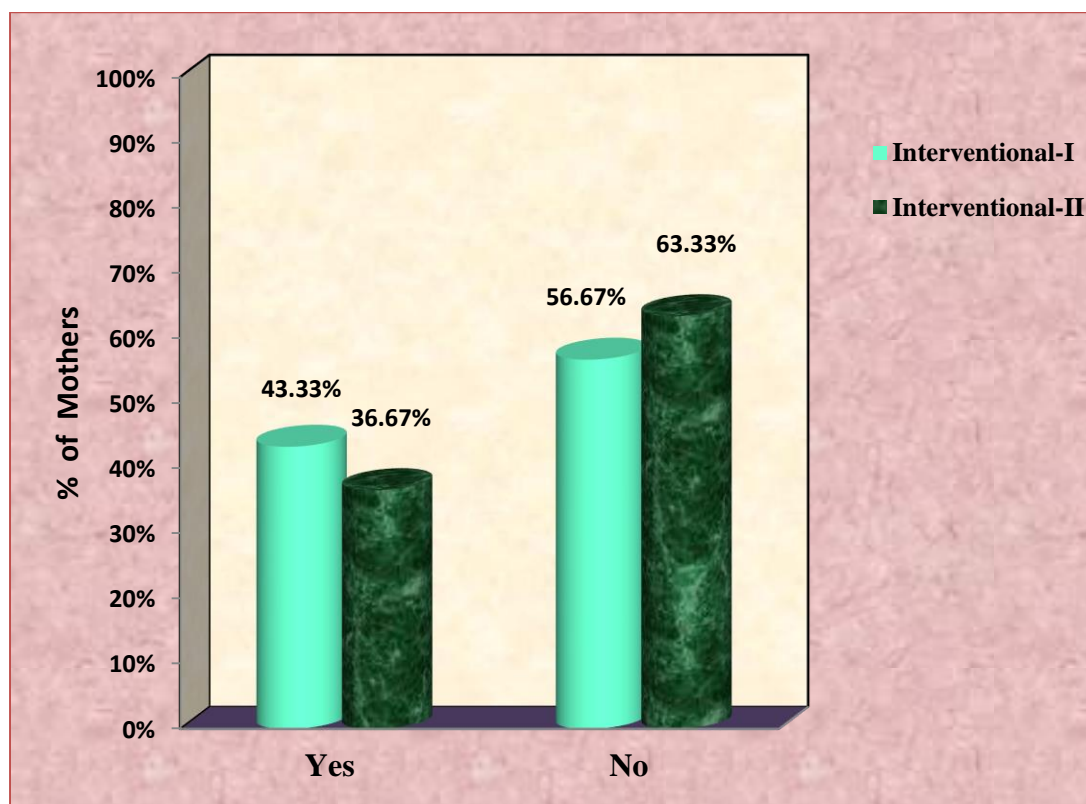


Figure: 10 Multiple cylinder diagram portrays that distribution of post caesarean mothers according to their previous history of Urinary tract infection.

In interventional group I majority of the study participants, 17 (56.67%) had no previous history of urinary tract infection and remaining 13 (43.33%) had previous history of urinary tract infection. In interventional group II majority of the study participants 19 (63.33%) had no previous history of urinary tract infection and remaining 11 (36.67%) had previous history of urinary tract infection.

Distribution of subjects according to duration of napkin change.

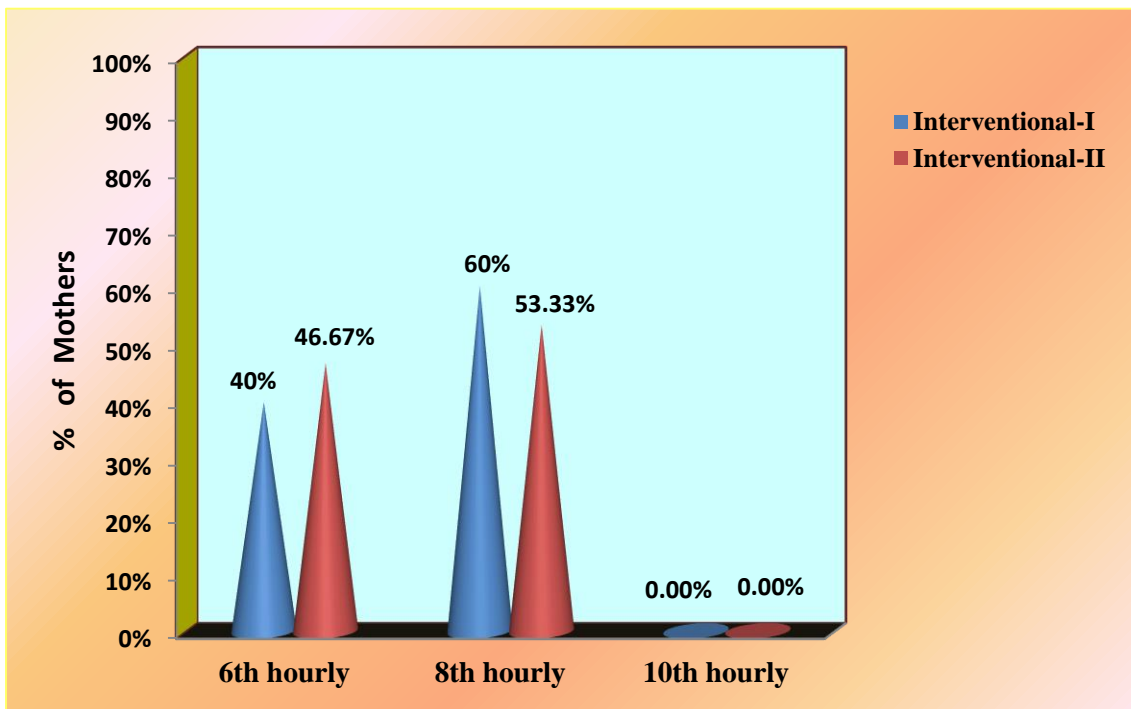


Figure : 11 Multiple cone diagram portrays that distribution of post caesarean mothers according to their duration of napkin change.

In interventional group I majority of the study participants 18 (60%) had changed 8th hourly, remaining 12 (40%) had changed 6th hourly and none of them had changed 10th hourly. In interventional group II majority of the study participants, 16 (53.33%) had changed 8th hourly, remaining 14 (46.67%) had changed 6th hourly and none of them had changed 10th hourly.

Section – II

Distribution of pretest level of urinary tract infection among interventional group I and interventional group II.

Table – 2

Frequency and Percentage distribution of pretest level of urinary tract infection score among interventional group I and group II.

n=60

Level of infection	Intervention Group I		Intervention Group II		χ^2
	Pre-test		Pre-test		
	f	%	f	%	
Mild	0	0	0	0	$\chi^2=1.14$ P=0.28(NS)
Moderate	13	43.33	9	30	
High	17	56.67	21	70	
Total	30	100	30	100	

*Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.

The above table 2 shows the distribution of pre test level of urinary tract infection score among mothers with indwelling catheter.

In interventional group I majority of the study participants 17 (56.67%) had high urinary tract infection and 13 (43.33%) of them had moderate urinary tract infection and none of them had mild urinary tract infection. In interventional group II, majority of the study participants 21 (70%) had high urinary tract infection, 9 (30%) of them had moderate urinary tract infection and none of them had mild urinary tract infection.

Table: 3 Pre test mean level of urinary tract infection among interventional group I and group II.

Test	Group	Mean	SD	Mean difference	Student independent “t” test
Pretest	Interventional group I	7.77	0.85	0.16	t=0.76 P=0.44(NS)
	Interventional group II	7.93	0.83		

***Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.**

The above table 3 shows the pre test mean level of urinary tract infection between interventional group I and interventional group II among mothers with indwelling catheter.

In interventional group I, the pretest level of mean score was 7.77 with standard deviation 0.85, where as in interventional group II mean score was 7.93 with standard deviation was 0.83 and the mean difference was 0.16.

The student independent “t” test was done to find out the difference between pretest level among intervention group I and intervention group II. The calculated ‘t’ value was 0.76 less than the table value which was not significant in pretest level at ‘p’ value 0.05.

Section – III

Distribution of post test level of urinary tract infection among interventional group I and interventional group II.

Table - 4

Frequency and Percentage distribution of post test level of urinary tract infection score among interventional group I and group II.

Level of infection	Intervention Group I		Intervention Group II		χ^2
	Post-test		Post-test		
	f	%	f	%	
Mild	5	16.67%	7	23.33%	$\chi^2=6.71$ P=0.05*(S)
Moderate	19	63.33%	23	76.67%	
High	6	20.00%	0	0.00%	
Total	30	100	30	100	

***Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.**

The above table 4 shows the distribution of post test level of urinary tract infection score among mothers with indwelling catheter.

In interventional group I majority of the study participants 19 (63.33%) had moderate urinary tract infection and 6 (20%) of them had high urinary tract infection and remaining 5 (16.67%) had mild urinary tract infection. In interventional group II majority of the study participants 23 (76.67%) had moderate urinary tract infection, 7 (23.33%) of them had mild urinary tract infection and none of them had high urinary tract infection.

The chi square test was done to find out the significance between the post test among the interventional group I and interventional group II. The $\chi^2 = 6.71$ was greater than the table value which was statistically significant at 0.05 level.

Table : 5 Post test level of mean score among interventional group I and interventional group II.

Test	Group	Mean	SD	Mean difference	Student independent “t” test
Post test	Interventional group I	4.97	1.73	0.84	t=2.27 (P=0.05*)
	Interventional group II	4.13	1.01		

*Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.

The above table 5 shows the post test mean level of urinary tract infection between interventional group I and interventional group II among mothers with indwelling catheter.

In interventional group I, the post test level of mean score was 4.97 with standard deviation 1.73, where as in interventional group II mean score was 4.13 with standard deviation was 1.01 and the mean difference was 0.84.

The student independent ‘t’ test was done to find out the difference between post test level among intervention group I and intervention group II. The calculated ‘t’ value was 2.27 greater than the table value which was significant in post test level at ‘p’ value 0.05.

Section - III

Effectiveness of betadine perineal care (interventional group I) and chlorhexidine perineal care (interventional group II) on level of urinary tract infection among mothers with indwelling catheter.

Table - 6

Pretest and post test level of urinary tract infection among interventional group I and interventional group II.

Groups	Pretest		Posttest		Effectiveness of study
	Score	%	Score	%	
Interventional-I	7.77	77.7%	4.97	49.7%	28.0%
Interventional-II	7.93	79.3%	4.13	41.3%	38.0%

The above table 6 shows the effectiveness of betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II on level of urinary tract infection among mothers with indwelling catheter.

In interventional group I, the pretest score 7.77 and percentage of score 77.7, where as in post test mean score 4.74 and percentage of score 49.7. Interventional group I mothers were having 28% more reduction of infection score.

In interventional group II, the pretest score 7.93 and percentage of score 79.7, where as in post test mean score 4.13 and percentage of score 41.3. Interventional group II mothers were having 38% more reduction of infection score.

This difference shows the effect of chlorhexidine perineal care on reducing the level of urinary tract infection among mothers with indwelling catheter.

Pre test and post test urinary tract infection score

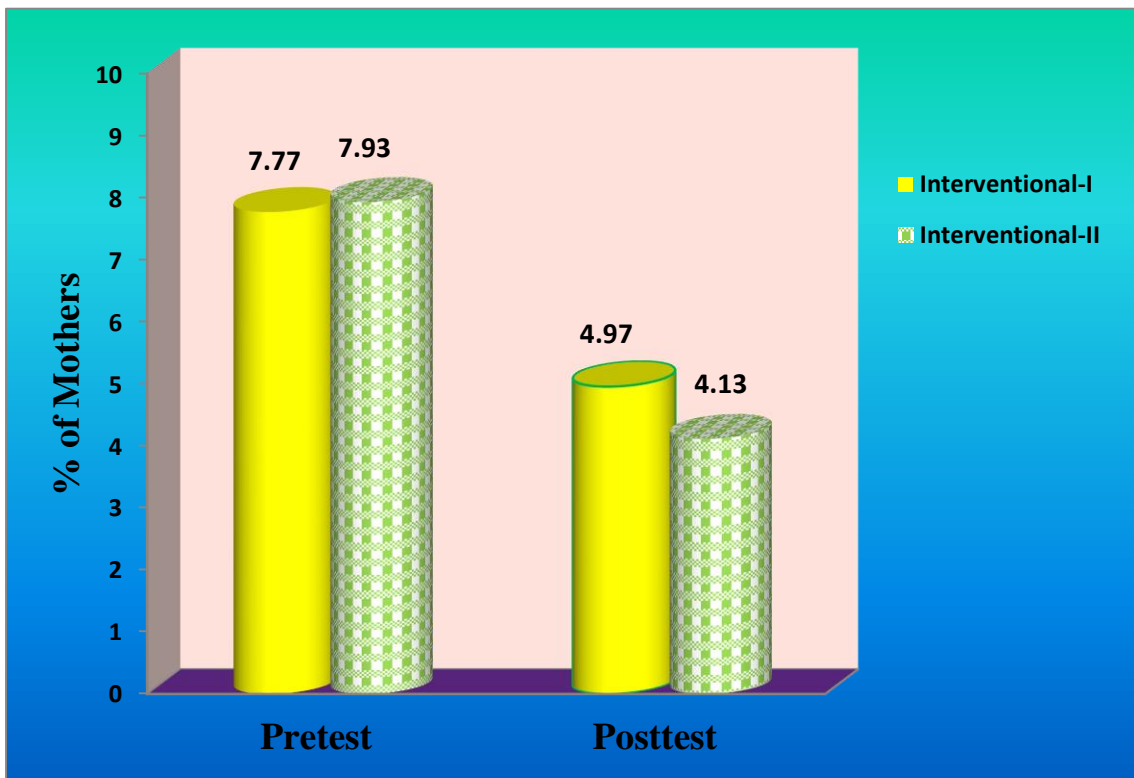


Figure: 12 Multiple cylindrical diagram portrays distribution of post caesarean mothers according to their pretest and post test score.

The effect of betadine perineal care and chlorhexidine perineal care on urinary tract infection among mothers with indwelling catheter. In interventional group I, the pretest mean score 7.77 and percentage of score 77.7, where as in post test mean score 4.74 and percentage of score 49.7. Interventional group I mothers were having 28% more reduction of infection score.

In interventional group II, the pretest score 7.93 and percentage of score 79.7, where as in post test mean score 4.13 and percentage of score 41.3. Interventional group II mothers were having 38% more reduction of infection score.

This difference shows the effect of chlorhexidine perineal care on reducing the level of urinary tract infection among mothers with indwelling catheter.

Section – IV

Comparison of pre test and post test level of urinary tract infection among interventional group I and interventional group II.

Table –7

Pretest and Post test level of Urinary tract infection among interventional group I and interventional group II.

Group	Level of infection	Test				Extended McNemar's test
		Pretest(n=30)		Posttest(n=30)		
		f	%	f	%	
Interventional group-I	Mild	0	0	5	16.67	$\chi^2=10.71$ P=0.001***(S)
	Moderate	13	43.33	19	63.33	
	High	17	56.67	6	20	
Interventional group-II	Mild	0	0	7	23.33	$\chi^2=18.19$ P=0.001***(S)
	Moderate	9	30	23	76.67	
	High	21	70	0	0	

***Significant at $P \leq 0.05$, **Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.**

The above table 7 depicts the comparison of pretest and post test level of urinary tract infection score among mothers with indwelling catheter in interventional group I and interventional group II.

In interventional group I, the pretest level majority of the study participants 17 (56.67%) had high urinary tract infection, 13 (43.33%) had moderate urinary tract infection and none of them had mild urinary tract infection, where as in the post test level, majority of the study participants 19 (63.33%) had moderate urinary tract infection, 6 (20%) of them had high urinary tract infection, and remaining 5 (16.67%) had mild urinary tract infection.

In interventional group II, the pre test level, majority of the study participants 21 (70%) had high urinary tract infection, 9 (30%) had moderate urinary tract infection and none of them had mild urinary tract infection, where as in post test level majority of the study participants 23 (76.67%) had moderate urinary tract infection, remaining 7 (23.33 %) of them had mild urinary tract infection and none of them had severe urinary tract infection.

The Mc Nemer's test was done to find out difference between the pretest and post test among interventional group I and interventional group II. The χ^2 value in interventional group was 10.71 where as in interventional group II χ^2 was 18.19. There is a significant difference between interventional group I and interventional group II.

Table: 8 Pretest and post test mean level of urinary tract infection score among interventional group I and interventional group II.

Group		Mean	SD	Mean difference	Paired t-test
Interventional group I	Pretest	7.77	0.85	2.80	t=8.86 P=0.001***(S)
	Posttest	4.97	1.73		
Interventional group II	Pretest	7.93	0.83	3.80	t=13.92 P=0.001***(S)
	Posttest	4.13	1.01		

***Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly significant at $P \leq 0.001$.**

The above table 8 reveals the comparison of pretest and post test level of urinary tract infection score between intervention group I and intervention group II among mothers with indwelling catheter.

In interventional group I, the pretest level of mean score was 7.77 with standard deviation 0.85, where as in post test mean score was 4.97 with standard deviation was 1.73 and the mean difference between pretest and post test in intervention group I was 2.80 . The calculated 't' value was 8.86 greater than the table value at 0.001 level.

In interventional group II, the pretest level of mean score was 7.93 with standard deviation 0.83, where as in post test mean score was 4.13 with standard deviation was 1.01 and the mean difference between pretest and post test in intervention group II was 3.80 . The calculated 't' value was 13.92 greater than the table value at 0.001 level.

Section – V

Association between the post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II with their selected socio demographic and obstetrical variables.

Table– 9

Association between post test level of urinary tract infection among interventional group I with their selected socio demographic and obstetrical variables.

n= 30

S. No	Socio demographic variables	Level of infection						χ^2	P - value
		Mild		Moderate		High			
		f	%	f	%	f	%		
1	Age in years								
	a. < 25	2	11.76	11	64.71	4	23.53	2.17 (df=3)	0.70
	b. 25-30	2	18.18	7	63.64	2	18.18		
	c. 31-35	1	50.00	1	50.00	0	0.00		
	d. >35	0	0	0	0	0	0		
2	Educational status								
	a. No formal education	2	33.33	3	50	1	16.67	9.09 (df=3)	0.16
	b. Primary	2	20	8	80	0	0		
	c. Secondary	1	7.69	8	61.54	4	30.77		
	d. Graduate	0	0	0	0	1	100		
3	Occupation								
	a. Homemaker	4	20	14	70	2	10	10.56 (df=3)	0.10
	b. Coolie	0	0	3	100	0	0		
	c. Self employment	1	16.67	2	33.33	3	50		
	d. Private employee	0	0	0	0	1	100		

S.No	Socio demographic variables	Level of infection						χ^2	P - value
		Mild		Moderate		High			
		f	%	f	%	f	%		
4	Place of residence								
	a. Rural	5	18.52	16	59.26	6	22.22	1.93 (df=1)	0.38
	b. Urban	0	0	3	100	0	0		
5	Use of latrine								
	a. Personal	4	33.33	8	66.67	0	0	9.87 (df=2)	0.05*
	b. Public	1	6.67	10	66.67	4	26.66		
	c. open field	0	0	1	33.33	2	66.67		
Obstetric Variables									
6	Parity								
	a. Primi	5	29.41	8	47.06	4	23.52	6.25 (df=2)	0.04*
	b. Multi para	0	0	11	84.62	2	15.38		
7	Previous experience of catheterization								
	a. Yes	2	12.50	13	81.25	1	6.25	5.33 (df=1)	0.07
	b. No	3	21.42	6	42.86	5	35.71		
8	Indications for catheterization								
	a. Surgical purpose	4	16.67	14	58.33	6	25	1.97 (df=1)	0.37
	b. Monitoring purpose	1	16.67	5	83.33	0	0		
9	Previous history of urinary tract infection								
	a. Yes	5	38.46	7	53.84	1	7.70	8.60 (df=1)	0.01*
	b. No	0	0	12	70.58	5	29.42		
10	Duration of napkin changing								
	a. 6 th hourly	3	25	8	66.67	1	8.33	2.23 (df=2)	0.32
	b. 8 th hourly	2	11.11	11	61.11	5	27.78		
	c. 10 th hourly	0	0	0	0	0	0		

*Significant at $P \leq 0.05$, **Highly significant at $P \leq 0.01$, *** very highly

significant at $P \leq 0.001$

The table 9 explains the association between post test level of urinary tract infection among mothers with indwelling catheter in interventional group I with selected socio demographic and obstetrical variables.

In order to find out the association between the post test level of urinary tract infection in interventional group I and selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2=9.87$), ($P = 0.05^*$) used by **multi gravid mothers** ($\chi^2=6.25$), ($P = 0.04^*$) with **previous history of urinary tract infection** ($\chi^2=8.60$), ($P = 0.01^*$)

No other variables were significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.

Table - 10 Association of post test level of urinary tract infection for interventional group II with their selected socio demographic and obstetrical variables.

n= 30

S. No	Socio demographic variables	Level of infection						χ^2	P - value
		Mild		Moderate		High			
		f	%	f	%	f	%		
1	Age in years								
	a) < 25	5	27.78	13	72.22	0	0	1.11 (df=3)	0.57
	b) 25-30	1	11.11	8	88.89	0	0		
	c) 31-35	1	33.33	2	66.67	0	0		
	d) >35	0	0	0	0	0	0		
2	Educational status								
	a) No formal education	0	0	2	100	0	0	3.95 (df=3)	0.26
	b) Primary	4	23.53	13	76.47	0	0		
	c) Secondary	2	20	8	80	0	0		
	d) Graduate	1	100	0	0	0	0		
3	Occupation								
	a) Homemaker	7	26.92	19	73.08	0	0	1.40 (df=3)	0.70
	b) Coolie	0	0	2	100	0	0		
	c) Self employment	0	0	1	100	0	0		
	d) Private employee	0	0	1	100	0	0		
4	Place of residence								
	a) Rural	6	23.08	20	76.92	0	0	0.01 (df=1)	0.93
	b) Urban	1	25	3	75	0	0		
5	Use of latrine								
	a. Personal	6	46.15	7	53.85	0	0	6.72 (df=2)	0.05*
	b. Public	1	6.67	14	93.33	0	0		
	c. open field	0	0	2	100	0	0		

S. No	Obstetric variables	Level of infection						χ^2	P - value
		Mild		Moderate		High			
		f	%	f	%	f	%		
6	Parity								
	a) Primi	6	42.85	8	57.15	0	0	5.59 (df=2)	0.02*
	b) Multi para	1	6.25	15	93.75	0	0		
7	Previous experience of catheterization								
	a) Yes	3	17.65	14	82.35	0	0	0.70 (df=1)	0.40
	b) No	4	30.77	9	69.23	0	0		
8	Indications for catheterization								
	a) Surgical purpose	7	25	21	75	0	0	0.65 (df=1)	0.41
	b) Monitoring purpose	0	0	2	100	0	0		
9	Previous history of urinary tract infection								
	a) Yes	3	27.27	8	72.73	0	0	0.15 (df=1)	0.69
	b) No	4	21.05	15	78.95	0	0		
10	Duration of napkin changing								
	a) 6 th hourly	6	42.86	8	57.14	0	0	5.59 (df=2)	0.02*
	b) 8 th hourly	1	6.25	15	93.75	0	0		
	c) 10 th hourly	0	0	0	0	0	0		

*Significant at $P \leq 0.05$, ** Highly significant at $P \leq 0.01$, *** very highly

significant at $P \leq 0.001$.

The above table 10 explains the association between post test level of urinary tract infection among mothers with indwelling catheter in interventional group II with selected socio demographic and obstetric variables.

In order to find out the association between the post test level of urinary tract infection in interventional group II and selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level

of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2 = 6.72$), ($P=0.05^*$) used by **multi gravid mothers** ($\chi^2 =5.59$), ($P=0.04^*$) by **changing of napkin 8th hourly** ($\chi^2 =5.59$), ($P=0.02^*$) .

No other variables were significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.

DISCUSSION

CHAPTER V

DISCUSSION

The 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 relationships can be discussed.

Based on the objectives of the study and hypotheses, this chapter deals with the detailed discussion of the result of the data interpreted from the statistical analysis. The purpose of the study was to evaluate the effectiveness of the betadine Vs chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward at Government Rajaji Hospital, Madurai. 60 samples were selected by simple random sampling technique. The level of urinary tract infection was assessed with Modified urinary tract infection symptom and analysis scoring system.

The objectives of the study were

- ❖ To assess the level of urinary tract infection among mothers with indwelling catheters in post operative caesarean ward at Government Rajaji hospital, Madurai.
- ❖ To evaluate the effectiveness of betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.
- ❖ To compare the effectiveness between betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.

- ❖ To associate the level of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward with their selected socio demographic and obstetrical variables.

The following research hypothesis were formulated for the study

All the hypotheses were tested at 0.05 level of significance,

H₁ : There is a significant difference between pre and post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₂ : There is a significant difference between post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₃ : There is a significant association between the level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II with their selected socio demographic and obstetrical variables.

The findings of the study were discussed under the following headings,

- ❖ Distribution of subjects according to their socio demographic variables.
- ❖ Distribution of pretest level of urinary tract infection among interventional group I and interventional group II.
- ❖ Distribution of post test level of urinary tract infection among interventional group I and interventional group II.
- ❖ Description of effectiveness of betadine perineal care (interventional group I) and chlorhexidine perineal care (interventional group II) among mothers with indwelling catheter.
- ❖ Comparison of pre test and post test level of urinary tract infection among interventional group I and interventional group II.

- ❖ Association of post test level of infection among mothers with indwelling catheter in intervention group I and intervention group II with their selected socio demographic data.

According to WHO, an estimated 50% of women report having had a urinary tract infection at some other point in their lives. From the global reports reviewed UTI rates among the post partum mothers ranges from as low as 16% to high as 68% in the developing countries. In west African sub region a hospitalized based study in Nigeria documented a highest rate of UTI 78%. At national wide report reviews nearly 77.9% of the pregnant women were in the age group of 18-25 years had urinary tract infection. Nearly 3241 cases were reported with the symptoms of UTI among post partum mothers. Out of which 2346 cases were in need of treatment.

Hence the study aimed in evaluating the level of urinary tract infection among mothers with indwelling catheter.

Discussion based on socio demographic and obstetrical variables among intervention group I and interventional group II.

It is interesting to note that while mentioning about age, in interventional group I majority of the mothers 17 (56.67%) were belongs to less than 25 years. In interventional group II, majority of the mothers 18 (60%) were belongs to less than 25 years.

As far the educational status was concerned, in interventional group I majority of the study participants 13 (43.33%) were studied up to secondary education and in interventional group II, majority of the study participants 17 (56.67%) were studied up to primary education.

In the view of occupation, in interventional group I most of the mothers participants 20 (66.67%) were home maker and in intervention group II, most of the mothers 26 (86.67%) were home maker.

With regard to the place of residence, in intervention group I majority of mothers 27 (90%) were hailed from rural and in interventional group II majority of mothers 26 (86.67%) were hailed from rural.

In the view of use of latrine, both in interventional group I and interventional group II majority of the study participants 15 (50%) were used public latrine.

Based on parity, in interventional group I majority of the mothers 17 (56.67%) were primi and in interventional group II majority of the study participants 16 (53.33%) were multi gravid mothers.

About the previous experience of catheterization, in intervention group I majority of the study participants 16 (53.37%) had previous experience of catheterization and in interventional group II majority of the study participants 17 (56.67%) had previous experience of catheterization.

Comparing the indications for catheterization, in interventional group I majority of the study participants 24 (80%) had surgical reasons and in interventional group II majority of the study participants 28 (93.33%) had surgical reasons.

With regard to previous history, in interventional group I majority of the study participants 17 (56.67%) had no previous history of urinary tract infection. In interventional group II, majority of the study participants 16 (63.33%) had no previous history of urinary tract infection.

Based the duration of napkin changing, in intervention group I majority of the study participants 18 (60%) were changed 8th hourly and in interventional group II majority of the study participants 16 (53.33%) were changed 8th hourly.

Discussion of study based on the objectives:

The first objective of the study was to assess the level of urinary tract infection among mothers with indwelling catheters in post operative caesarean ward at Government Rajaji hospital, Madurai.

Pretest of urinary tract infection in interventional group I majority of the study participants 17 (56.67%) had high urinary tract infection and 13 (43.33%) of them had moderate urinary tract infection and none of them had mild urinary tract infection.

Pretest of urinary tract infection in interventional group II, majority of the study participants 21 (70%) had high urinary tract infection, 9 (30%) of them had moderate urinary tract infection and none of them had mild urinary tract infection.

Shalini ganesh and Elsa devi (2017) conducted a quasi experimental study on effectiveness of chlorhexidine catheter care and conventional catheter care on prevention of urinary tract infection in selected hospital of ICU, Manipal. Pretest and post test design was adopted. 60 samples were selected (30 experimental and 30 control group) through consecutive sampling. The study results showed that implementation of catheter care with chlorhexidine among mothers with indwelling catheter was effective as the “P” value was 0.001($t=0.28$, CI = 0.67). The study concluded that use of chlorhexidine in catheter care reduces the incidence of catheter associated urinary tract infection.

The second objective of the study was to evaluate the effectiveness of betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.

The intervention betadine and chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter between the pretest and post test.

Pretest of urinary tract infection in interventional group I majority 17 (56.67%) had high urinary tract infection and 13 (43.33%) of them had moderate urinary tract infection and none of them had mild urinary tract infection where as in post test majority 19 (63.33%) had moderate urinary tract infection and 6 (20%) of them had high urinary tract infection and remaining 5 (16.67%) had mild urinary tract infection.

Pretest of urinary tract infection in interventional group II, majority 21 (70%) had high urinary tract infection, 9 (30%) of them had moderate urinary tract infection and none of them had mild urinary tract infection, where as in post test majority of the study participants 23 (76.67%) had moderate urinary tract infection, 7 (23.33%) of them had mild urinary tract infection and none of them had high urinary tract infection.

Bracely.et.al.,(2015) conducted a randomized controlled study on effectiveness of chlorhexidine (0.1%) and normal saline catheter care on reducing catheter associated urinary tract infection in 3 large hospital, Australia. 784 samples were selected through purposive sampling technique which was allocated in both control and experimental groups and interventions were given for the duration of 2 weeks. The study results shows that two groups (control and intervention group) power of 80% and alpha of 0.05% and effect size of 0.2% using Cohen size effect

measurement (the mean distribution of infection 0.003% CI 0.001 to 0.005). The study concluded that chlorhexidine was effective in reducing 90% of CAUTI which was significant at the level of $P < 0.05$.

Hence the hypotheses H₁: There is a significant difference between pre and post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II was accepted.

The third objective of the study was to compare the effectiveness between betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.

Post test of urinary tract infection in interventional group I majority of the study participants 19 (63.33%) had moderate urinary tract infection and 6 (20%) of them had high urinary tract infection and remaining 5 (16.67%) had mild urinary tract infection.

Post test of urinary tract infection in interventional group II majority of the study participants 23 (76.67%) had moderate urinary tract infection, 7 (23.33%) of them had mild urinary tract infection and none of them had high urinary tract infection

Monika dutta, Verma Dutta (2012) conducted a quasi experimental study on effectiveness of betadine versus chlorhexidine catheter care in prevention of catheter associated urinary tract infection in selected wards of Nehru hospital, PGIMER, Chandigarh. Simple random sampling technique was used to assigning the subjects in interventional group I (betadine perineal care) and interventional group II (chlorhexidine perineal care). Total 53 subjects were randomly distributed in group I (27) and group II (26). All the subjects were taken within 24 hours of catheterization and culture and sensitivity and microscopic was sent. Catheter care was provided

consecutively for 5 days twice daily. The study shows that there was a significant difference between the groups were observed ($\chi^2 = 1.17$, $df=1$, $p > .05$). The study concluded that chlorhexidine perineal care was effective in reducing catheter associated urinary tract infection.

Hence the hypotheses H₂: There is a significant difference between the post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II was accepted.

The fourth objective of the study was to associate the level of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward with their selected demographic and obstetric variables.

In order to find out the association between the post test level of urinary tract infection in interventional group I with their selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2 = 9.87$), ($P = 0.05^*$) used by **multi gravid mothers** ($\chi^2 = 6.25$), ($P = 0.04^*$) with **previous history of urinary tract infection** ($\chi^2 = 8.60$), ($P = 0.01^*$). No other variables were significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.

In order to find out the association between the post test level of urinary tract infection in interventional group II and selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2 = 6.72$), ($P = 0.05^*$) used by **multi gravid mothers** ($\chi^2 = 5.59$), ($P = 0.04^*$) by **changing of napkin 8th hourly** ($\chi^2 = 5.59$), ($P = 0.02^*$). No other variables were

significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.

Sherine peter.et.al.,(2017) conducted a quasi experimental study on effectiveness of chlorhexidine and antiseptic solution catheter care on prevention of catheter associated urinary tract infections in selected hospitals, Manipal. Non equivalent control group pretest and post test design was used. 70 samples were selected (experimental – 35 and control – 35) using purposive sampling technique. Data were gathered by using observational checklist and urine culture and sensitivity analysis. Three days interval was kept between pretest and post test after the implementation of care. The result of the study shows chlorhexidine was effective in reducing CAUTI as the p value was 0.001 (CI=0.95). The study concluded that chlorhexidine was effective on reducing the incidence of CAUTI in the hospitals.

Heikrujam kabina .et.al.,(2014) conducted a quasi experimental study on effectiveness of betadine Vs normal saline in catheter care for prevention of CAUTI at selected hospital in Guwahati. 40 samples were selected (20 in each group of betadine and normal saline) who fulfill inclusion criteria using purposive sampling technique. Care was given daily once for 3 days. Data was collected by using observation checklist and urine analysis. The results reveal that in normal saline group 17(87%) were found effective and in betadine group 20(100%) were found to be effective (t = 0.27 at 0.05 level of significance). The study concluded that betadine was highly effective in treating urinary tract infection.

Hence the hypotheses H₃ - There is a significant association between the level of infection among mothers with their selected demographic and obstetric variables in interventional group I and group II was accepted.

The result of the present study has contributed more benefit which in turn to reduce urinary tract infection among mothers with indwelling catheter.

*SUMMARY,
CONCLUSION AND
RECOMMENDATIONS*

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

This chapter deals includes the summary, conclusion, and implications, recommendations and limitations of the study in the field of nursing.

6.1 Summary of the Study

The present study was done to compare the effectiveness of betadine versus chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter in post operative caesarean ward at Government Rajaji Hospital, Madurai-20.

The study was carried out with following objectives

- ❖ To assess the level of urinary tract infection among mothers with indwelling catheters in post operative caesarean ward at Government Rajaji hospital, Madurai.
- ❖ To evaluate the effectiveness of betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.
- ❖ To compare the effectiveness between betadine perineal care in interventional group I and chlorhexidine perineal care in interventional group II among mothers with indwelling catheter.
- ❖ To associate the level of urinary tract infection among patient with indwelling catheter in post operative caesarean ward with their selected socio demographic and obstetrical variables.

The following research hypotheses were formulated for the study

H₁ : There is a significant difference between pre and post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₂ : There is a significant difference between post test level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II.

H₃ : There is a significant association between the level of urinary tract infection among mothers with indwelling catheter in interventional group I and interventional group II with their selected socio demographic and obstetrical variables.

Assumptions

This study assumption were

Caesarean mothers having indwelling catheter have varying level of urinary tract infection and it will be differs from one mother to another mother.

The conceptual frame work of the study was based on Modified Imogene King's goal attainment theory. The study was conducted in post operative caesarean ward at Government Rajaji Hospital, Madurai. The study was conducted by using true experimental pretest – post design. The population of the study was post operative caesarean mothers with indwelling catheter at Government Rajaji Hospital, Madurai. Simple random sampling technique was used to select the samples. The sample consists of 60 subjects (30 in interventional group I and 30 in interventional group II). After testing the validity and reliability of the tool, a pilot study was conducted among 10 non study subjects at Government Rajaji Hospital, Madurai, to find out the feasibility and practicability. The main study was started from 04.06.2018 to

13.07.2018. Data gathered was analyzed by using both descriptive and inferential statistics.

The data collection tool consists of three parts,

Section- I: Socio demographic variables.

The tool consists of socio-demographic variables-Age, educational status, occupation, place of residence, use of latrine.

Section- II: Obstetric variables

It consists of parity, previous exposure of catheterization, indications of catheterization, previous history of catheterization, duration of napkin changing.

Section- III: Modified Urinary tract infection symptoms and analysis scoring system

It consist 10 items and each answers scored ranges between 0-10 which was designed to assess level of urinary tract infection.

Scoring procedure

SCORE	LEVEL OF INFECTION
1-3	Mild
4-7	Moderate
8-10	High

The tool and content (Modified urinary tract infection symptom and analysis scoring system) was validated by experts in the field of obstetrics and gynaecological nursing, medical experts in department of obstetrics and gynaecology, and statistics. Data collection was done by using the prescribed tool to assess the level of urinary tract infection. Pre test level of urinary tract infection was assessed on immediate post operative day using tool and sample of urine was sent to microbiology lab for analysis

by the researcher. Betadine perineal care for interventional group I and chlorhexidine perineal care for interventional group II was given to the mothers twice daily for 3 consecutive days. Effectiveness was assessed 2 days after the removal of the catheter (6th day) using modified urinary tract infection symptom and urine analysis scoring tool and by sending the sample for analysis.

Collected data was analyzed by using both descriptive (mean, standard deviation, frequency and percentage) and inferential statistics (paired, independent “t” test, Chi Square and Mc Nemers) and results were analyzed.

6.2 Major findings of the study

- With the view of age, in interventional group I majority of the mothers 17 (56.67%) were belongs to less than 25 years. In interventional group II, majority of the mothers 18 (60%) were belongs to less than 25 years.
- As far the educational status was concerned, in interventional group I majority of the study participants 13 (43.33%) were studied up to secondary education and in interventional group II, majority of the study participants 17 (56.67%) were studied up to primary education.
- In the view of occupation, in interventional group I majority of the study participants 20 (66.67%) were home maker and in intervention group II, most of the mothers 26 (86.67%) were home maker.
- With regard to the place of residence, in intervention group I majority of mothers 27 (90%) were hailed from rural and in interventional group II majority of mothers 26 (86.67%) were hailed from rural.
- In the view of use of latrine, both in interventional group I and interventional group II majority of the study participants 15 (50%) were used public latrine.

- Based on parity, in interventional group I majority of the mothers 17 (56.67%) were primi and in interventional group II majority of the study participants 16 (53.33%) were multi gravid mothers.
- About the previous experience of catheterization, in intervention group I majority of the study participants 16 (53.37%) had previous experience of catheterization and in interventional group II majority of the study participants 17 (56.67%) had previous experience of catheterization.
- Comparing the indications for catheterization, in interventional group I majority of the study participants 24 (80%) had surgical purpose and in interventional group II majority of the study participants 28 (93.33%) had surgical purpose.
- With regard to previous history, in interventional group I majority of the study participants 17 (56.67%) had no previous history of urinary tract infection. In interventional group II, majority of the study participants 16 (63.33%) had no previous history of urinary tract infection.
- Based the duration of napkin changing, in intervention group I majority of the study participants 18 (60%) were changed 8th hourly and in interventional group II majority of the study participants 16 (53.33%) were changed 8th hourly.

The urinary tract infection was assessed by modified urinary tract infection symptom and analysis scoring system among interventional group I and group II.

- In interventional group I, the pretest level of mean score was 7.77 with standard deviation 0.85, where as in interventional group II mean score was 7.93 with standard deviation was 0.83 and the mean difference was 0.16. It is confirmed by student independent 't' test. The calculated 't' value was 0.76

less than the table value which was not significant in pretest level at 'p' value 0.05.

The intervention betadine and chlorhexidine perineal care on reducing the occurrence of urinary tract infection created a vast difference between the score obtained by mothers with indwelling catheter between the pretest and post test.

- Pretest of urinary tract infection in interventional group I majority 17 (56.67%) had high urinary tract infection and 13 (43.33%) of them had moderate urinary tract infection and none of them had mild urinary tract infection where as in post test majority 19 (63.33%) had moderate urinary tract infection and 6 (20%) of them had high urinary tract infection and remaining 5 (16.67%) had mild urinary tract infection.
- Pretest of urinary tract infection in interventional group II, majority 21 (70%) had high urinary tract infection, 9 (30%) of them had moderate urinary tract infection and none of them had mild urinary tract infection, where as in post test majority of the study participants 23 (76.67%) had moderate urinary tract infection, 7 (23.33%) of them had mild urinary tract infection and none of them had high urinary tract infection.

Comparing the pretest and post level of urinary tract infection among interventional group I and group II.

- In interventional group I, the pretest level of mean score was 7.77 with standard deviation 0.85, where as in post test mean score was 4.97 with standard deviation was 1.73 and the mean difference between pretest and post test in intervention group I was 2.80 . It was confirmed by paired 't' test. The calculated 't' value was 8.86 greater than the table value at 0.001 level.

- The Mc Nemer's test was done to find out difference between the pretest and post test among interventional group I and interventional group II. The χ^2 value in interventional group I was 10.71 where as in interventional group II χ^2 was 18.19.
- Association between the post test level of urinary tract infection in interventional group I with their selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2=9.87$), ($P = 0.05^*$) used by **multi gravid mothers** ($\chi^2 =6.25$), ($P = 0.04^*$) with **previous history of urinary tract infection** ($\chi^2 =8.60$), ($P = 0.01^*$). No other variables were significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.
- Association between the post test level of urinary tract infection in interventional group II and selected socio demographic variables, chi square analysis reveals that there was a significant association between post test level of urinary tract infection and socio demographic variables such as **use of public latrines** ($\chi^2 = 6.72$), ($P=0.05^*$) used by **multi gravid mothers** ($\chi^2 =5.59$), ($P=0.04^*$) by **changing of napkin 8th hourly** ($\chi^2 =5.59$), ($P=0.02^*$). No other variables were significantly associated with post test level of urinary tract infection among mothers with indwelling catheter.

6.3 Conclusion

This study statistically proved that the intervention of chlorhexidine perineal care was effective on urinary tract infection compared to betadine perineal care among mothers with indwelling catheter. There was a significant association between the post test level of urinary tract infection with their selected socio demographic variables.

6.4 Implications

The findings of the study have practical application in the field of nursing. The implication of the study could be discussed in four areas namely nursing practice, nursing administration, nursing research and nursing education.

Implications for nursing practice

The findings of the study will help the nurses in the following ways.

- Early identification and prevention of urinary tract infection among post operative caesarean mothers with indwelling catheter.
- Urinary tract infection is the most common nosocomial infection in surgical unit settings, this study implies the effectiveness of chlorhexidine on reducing the urinary tract infection.
- Chlorhexidine is inexpensive, and has no adverse side effects, nurses can use chlorhexidine perineal care nursing intervention in their clinical practice.
- The study creates the awareness among the nursing personnel about the importance of perineal care and also effective of chlorhexidine to reduce the infection.

Implications for Nursing Education

- ❖ This study enhances the nursing students to acquire knowledge and assessment of urinary tract infection and care of patient with indwelling catheter.
- ❖ This study provokes the critical thinking to the students and motive them to practice urinary tract infection symptom and analysis scoring system in the clinical area.
- ❖ The nurse educator can arrange in – service education program to update their knowledge regarding the new techniques and modalities while performing, perineal care.
- ❖ The nurse educators can teach the students about present study findings and its implications while demonstrating perineal care procedure.

Implications for Nursing Administration

- Nurse administrator can plan and organize seminars, workshops and conferences about “prevention of Nasocomial infection among post operative caesarean mothers” to health care professionals.
- The nurse administrator can formulate protocol to incorporate the study findings and motive the nurses to follow the protocol in caesarean ward.
- The nurse administrator should allocate appropriate resources to conduct similar studies in post operative caesarean ward.

Implications for Nursing Research

- ❖ This study motivates for further studies related to this field.
- ❖ This study favors for updating the knowledge and proper utilization of resources in the field of nursing research

- ❖ The study favors to practice evidence based practice.
- ❖ This study will help the researcher to formulate new methods of nursing care for mothers with indwelling catheter.

6.5 Recommendations

- A similar studies can be replicated with large samples with generalisation.
- A study can be conducted at different settings like MICU, Gynaecology ward among mothers with indwelling catheter.
- A comparative study can be conducted to find out the effectiveness of Betadine versus normal saline catheter care on reducing the urinary tract infection among mothers with indwelling catheter.
- A similar study can be conducted to find out the effectiveness of normal saline, chlorhexidine, betadine, soap and water perineal care on reducing urinary tract infection among mothers with indwelling catheter.
- A study can be conducted to evaluate the knowledge and the attitude of nurses regarding perineal care.
- A study can be conducted to assess the incidence of nosocomial infections among mothers who are admitted in MICU, gynaecology ward.
- An exploratory study can be done at various settings to identify factors influencing perineal care.

BIBLIOGRAPHY

REFERENCE

Books

1. Adelle Pillitery. (2006). *Maternal and Child Health Nursing*. (2nd ED).New Delhi:Lippincott and Williams Publishers.
2. Ann Marriener Tomy & Marth Rouile Alligood. (1998). *Nursing Theories and their work*. Mosby: Philadelphia.
3. Arnow,D. (1992). *Nursing procEDures-student version*. (1st ED). USA: Springhouse.
4. Augustine,A., Augustine,J., & Chacko,A. (2004). *Clinical nursing procEDure manual*. 1st ED., New Delhi:BI Publishers
5. Basavanthapa, B.T. (2006). *Textbook of midwifery and reproductive health*.New Delhi: Jaypee Brothers Company.
6. Berek ,S.Jonathan. (2007). *Textbook of Gynacology*.(14th ED).New Delhi: Wolters Kluwers private limitED.
7. Bhargarva,VL. (2009).*Text book of Gynecology*.(2nd ED).Newdelhi: Ane books pvt.Ltd.
8. Bobak Jensen. (2009). *Maternity and Gynecologic Care*. (5th ED).New Delhi: Mosby Publication.
9. Brenda,G.B & Suzanne,C.S. (1996). *Textbook of MEDical-Surgical Nursing*. (8th ED). Philadelphia: Lippincott Williams & wilkins.
10. Brown, K. Linda, Bennet Ruth,V. (2010). *Myles text book for midwives*. (12th ED). NewYork: Churchill living stone.
11. Corpe,W. (2000). *Microbial surface components involvED in adsorption of micro organisms onto surfaces*.(1st ED.). New York: John wiley & Sons

12. Danfortis. (2010). *Obstetrics & Gynecology*. Calcutta (9th ED). Lippincott & Williams Publication.
13. Dannel, E. Shaon, Wong and Perry. (1998). *Maternal and child nursing care*. C.V. Mosby: Philadelphia.
14. Daniels, R. (2004). *Nursing fundamentals – caring and clinical decision making*. (11th ED), Australia: Thomson publishers
15. Denise, F. Polit & Cheryl Tatano Beck. (2004). *Nursing Research*. (7th ED). New Delhi: Lippincott Williams and Wilkins.
16. Dutta. D. C. (2004). *Text book of gynaecology including perinatology and contraception*. (6th ED). Kolkata: New central book agency (p) Ltd.
17. Dutta., D. C. (1999). *Text book of obstetrics*. (5th ED). Calcutta: New central book agency.
18. Fawcett Jacqueline. (1989). *Analysis and evaluation of conceptual Model of Nursing*. Philadelphia: F.A. Davis.
19. Gary Cunningham, Kenneth J. Lenevo, Spong. Y. John. C. Havth, Catherine. (2008). *Williams obstetrics*. (23rd ED). London: McGraw Hill companies
20. Geri Lobiondo-Wood., & Judith Haber. (2006). *Nursing Research*. (6th ED.). St. Louis: Mosby publications.
21. Ghai, O.P. (2004). *Essential pEDIiatrics*. (6th ED.). New Delhi: CBS publisher.
22. Gupta, S.P. (1991). *Statistical Methods*. (3rd ED.). New Delhi: Sultan Chand.
23. Indrani, TK. (2003). *Textbook of Midwifer*. New Delhi: Jaypee brothers mEDical publishers.
24. Irene, Bobak, M. & Jensen Duncan Margret. (1995). *Essentials of maternity nursing*. (4th ED). Philadelphia. C. V. Mosby.

25. Jacob Annamma. (2008). *A comprehensive text book of midwifery*. (2nd ED).
New Delhi: Jaypee publications.
26. Jill Mantle, Jeanett Haslam, Sue barton (2006). *Physiotherapy in Obstetrics and Gynaecology*. (2nd ED). London: Elsevier ltd.
27. Joh Shidd. (2005). *Progress in Obstetric Gynecology*. UnitED kingdom:
Elsevier sciences ltd.
28. John.O.Schorge, Joseph.I.Schaffers, Lisa Halvorson.(2008). *Williams Gynecology* (2nd ED).China: McGraw Hill companies
29. Kothari. (2000). *Text book of methodology*. (2nd ED). New Delhi: Vishva parkson publication.
30. Koziar,B., Erb,G., Berman,A., & Burke, K. (2007). *Fundamentals of nursing – concepts process and practice*. (7th ED).New Delhi:Dorling Kindersley publishers
31. Kunnin, C.M., (2000). *Text book of Care of the Urinary Catheter. UTIs: Detection, Prevention and Management*. (2nd ED.). Baltimore: Williams & Wilkins
32. Krishna Menon, MK. Palaniappan. (2003).*Clinical obstetrics*.(9th EDition)Chennai: Orient longmen private ltd.
33. M C Kinney. (2009). (2nd ED). *Maternal-Child Nursing*. (1st ED) Philadelphia .Elsevier publishers.
34. Padubidri,VG.,Ela Anand.(2005). *The text book of Gynaecology*. New Delhi: Elsevier India private limitED.
35. Panay., Dutta., Ryan., Broadbent.(2005).*Obstetrics and Gynaecology*. London: Mosby publishers

36. Philip.N.Baker. (2006).*Obstetrics by ten teachers*.(16th ED). India: Jaypee brothers mEDical publishers.
37. Polit. Hungler. (2004). *Nursing Research Principles and Methods*. (6th ED) Philadelphia: Lippincott Company.
38. ReEDer. (2006). *The textbook of Maternity Nursing*. (18th ED). Philadelphia: Lippincott publishers.
39. Richa Saxena. (2012). *Snapshots in obstetrics and gynecology*. New delhi: Jaypee brothers mEDical publishers.
40. Rose Marie Linda. (2008). *Foundations of Nursing Research*. (5th ED.). New Delhi: Pearson
41. Ruth Bennet.V (2005). *Myles Text Book for Midwives*.(14thED). Calcutta: English Language Book Society
42. Sharon Smith Murray. et.al. (2006). *Foundation of maternal and newborn nursing*. (4th ED). Philadelphia: Saunders Company.
43. Shashank.V. (2000). *Handbook of practical gynaecology and obstetrics*. Mumbai: Vora mEDical publishers.
44. Sodashy., & Yalfe, B.J. (1993). *Nursing theory analysis application and evaluation*. (2nd ED) Boston: Little Brown.
45. Sunders Rao. PS. (1990). *An introduction to biostatistics*. (3 rd ED). New Delhi: prince hall publications.

Journal Reference

- 1) Al-Farsi,S., Olivia,M., Davidson,R., Richardson,S.E & Ratnapalan,S. (2009). Periurethral cleaning prior to urinary catheterization; sterile water versus 10% povidone-iodine. *Journal of MEDicine*, 48(6): 656-660. Barford,J. (2009). The pathogenesis of catheter associatED urinary tract infection. *Journal of Infection Prevention*, 10(2): 50-56. 35)
- 2) Bryon, C.S & Reynolds,K.L. (2004). Hospital acquirED bacteraemic urinary infection; Epidemiology & outcome. *Journal of Urology*, 132 : 494-498. 36)
- 3) Burke,J.P.,Garibaldi,R.A.,Britt,M.R.,Jacobson,J& Conti,M.(2001). Prevention of catheter associatED UTIs. *Journal of MEDicine*, 70 (3):655-658. 37)
- 4) Conterno,L.,Lobo,J.A & Masson,W. (2011). Excessive use of urinary catheters among hospitalizED patients. *Journal of urology*,45(5): 1089-96.
- 5) Crouzet,J.,Bertrand,X.,Venier,A.G.,Badoz,M.,Hussan,C & Talan,D. (2007). Control of the duration of urinary catheterization impact on CAUTI. *Journal of Hospital Infections*, 63(3):253-257. 39)
- 6) Deron,C., Janathan,R., Arjun Srinivasan., Scott,K & Carolyn,V. (2011). Trends in catheter AssociatED Urinary Tract Infections in adult intensive care units. *Infection Control & Epidemiology*, 32(8): 748-756. 7. Foxman,B. (2002). Epidemiology of UTI; Incidence, Morbidity & Economic costs. *American Journal of MEDicine*, 113(1A): 55-135.
- 7) Garibaldi,R.A. ,Burke,J.P., Dickmann,M.L & Smith,C.B. (1994). Factors prEDisposing to bacteriuria during indwelling urethral catheterization. *New England Journal of MEDicine*, 291: 213-219.

- 8) Gokula,R.R., Hickner,J.A & Smith,M.A. (2004). Inappropriate use of urinary catheters in elderly patients. *American Journal of Infection Control*, 32(4):196-199.
- 9) Gould,C.V.,Umschild, C.A., Agarwal, R.K.,et al. (2010). Guideline for prevention of catheter associatED urinary tract infections. *Infection Control & Hospital Epidemiology*, 31: 319.
- 10) Haley,R.W., Hooton,T.M & Culver,D.H. (2004). Nosocomial infections in U.S. Hospitals. *American Journal of MEDicine*, 70:947-959. 45) Hazelett, S.E.(2004). The association between indwelling urinary catheter use in the elderly and urinary tract infection in acute care. *BiomEDical Central Geriatrics*, 6:15.
- 11) Hussain,M., Oppenheim,P., Neill,C et al. (1996). Prospective survey of the incidence, risk factors & outcome of hospital acquirED infections in the elderly. *Journal of Hospital Infection*, 32:117-126.
- 12) Ihnsook Jeong., Soonmi. P., Jae.S.J., Duck. S.K & Young.S.C. (2010). Comparison of catheter associatED urinary tract infection rates by perineal care agents in ICUs. *Asian Nursing Research*,4(3):142-150.
- 13) Jacobson, J.A.,Alling,D.W.(2003).Evaluation of daily meatal care with poly-antibiotic ointment in prevention of urinary catheter-associatED bacteriuria. *Journal of Urology*, 129:331-334.
- 14) Jacobson, S.M.,Stickler,D.J.,Mobley,H & Shirliff,M.E. (2008). ComplicatED Catheter AssociatED UTIs due to E.coli & Proteus mirabilis. *American Journal of Infection Control*,21 (1):26-59.

- 15) Jain,P., Parada,J.P., David,A & Smith,L. (1995). Overuse of the indwelling urinary catheters in hospitalized medical patients. *Archives of Internal Medicine*,155 : 1425-1429.
- 16) Ken,B., Kay,C., James,F., Susan,M & Yuying chen. (2006). Evaluation of 3 methods of Bladder Irrigation to Treat Bacteriuria in Persons With Neurogenic Bladder. *Journal of Spinal cord Medicine*, 29(3):217-226.
- 17) Kucheria, R.P., Dasgupta, S.H.,Sacks., Khan,M.S., Sheerin,N.S. (2005). UTIs; new insights into a common problem. *Journal of Medicine*, 81:83-86.
- 18) Langley,J.M., Hanakowski,M & Leblanc,J.C. (2001).Unique epidemiology of nosocomial urinary tract infection. *American Journal of Infection Control*, 121:159-167.
- 19) Liedberg,H.(1989). Catheter induced urethral inflammatory reaction & UTI; an experimental & clinical study. *Scandinavian Journal of Urology & Nephrology Supplementation*, 124:1- 43.
- 20) Manjunath, G.N.,Prakash,R.,VamseDhar annam & Kiran shetty. (2011). Changing trends in the spectrum of antimicrobial drug resistant pattern of uropathogens. *International Journal of Biology and Medical Research*,2(2):504-507.
- 21) Matsumoto,T.,Sakumoto,M.,Takahashi,K & Kumazawa,J.(1997). Prevention of catheter associated UTI by meatal disinfection. *Journal of urology*, 195(2): 73-77.
- 22) Mead, M.G & Gruneberg. (1978).Prevalence of UTI. *British Journal of Diseases*,54:27.

- 23) Munasinghe, R.L., Yazdani,H., Siddique,M & Hafeez,W. (2003). Appropriateness of use of indwelling urinary catheters in patients admitted to the mEDical service. *Infection Control & Hospital Epidemiology*, 22(10): 647-649.
- 24) Nirmanmoh.B.,Mradul, K.D & Sandeep.G.(2010). Urinary catheterization in mEDical wards. *Journal of global infectious diseases*,2: 83-90.
- 25) O'Mahony,D. (1999). Antimicrobial Sensitives and causative organisms of UTIs. *South African Academy of Family Practice*, 20 (1):54-58.
- 26) Ouslander,J.G., Greengold,B & Chen,S.(1997). Complications of chronic indwelling urinary catheters; A prospective study. *Journal of Urology*, 138: 1191-1195.
- 27) Pappas, P.G., Kauffman, C.A., Andes, D., et al. (2009). Clinical practice guidelines for the management of candidiasis: Update by the Infectious Diseases Society of America. *Clinical Infectious Disease* , 48:503–535.
- 28) Paul, A., Tambyah & Dennis,G. (2000). Catheter associated urinary tract infection is rarely symptomatic. *Archives of Internal MEDicine*, 160(5): 678-682.
- 29) Pratt,R.J. (2002). National evidence based guidelines for preventing Health care Associated UTIs. *Infection Control Hospital Epidemiology*, 23(4):27-31.

NET REFERENCES:

1. <http://www.thecochranelibrary.com>
2. <http://www.ncbi.nlm.gov/pmc>
3. <http://www.hindwai.com>
4. <http://www.onlinelibrary.wiley.com>.
5. <http://imsear.hellis.org>
6. <http://www.biomEDcentral.com>
7. <http://dx.doi.org>
8. <http://www.libertpub.com/act>
9. <http://altmEDicine.about.com>
10. <http://amuj.arakmu.ac.ir>
11. <http://www.sciencEDirect.com>
12. <http://www.nursingtimes.net>
13. <http://www.mEDcape.org>

APPENDICES

APPENDIX – I

Ethical Committee Approval Letter



MADURAI MEDICAL COLLEGE
MADURAI, TAMILNADU, INDIA -625 020

(Affiliated to The Tamilnadu Dr.MGR Medical University,
Chennai, Tamil Nadu)



ETHICS COMMITTEE CERTIFICATE	
<p>Prof Dr V Nagaraajan MD MNAMS DM (Neuro) DSc.,(Neurosciences) DSc (Hons) Professor Emeritus in Neurosciences, Tamil Nadu Govt Dr MGR Medical University Chairman, IEC</p> <p>Dr.M.Shanthi, MD., Member Secretary, Professor of Pharmacology, Madurai Medical College, Madurai.</p> <p>Members</p> <p>1. Dr.V.Dhanalakshmi, MD, Professor of Microbiology & Vice Principal, Madurai Medical College</p> <p>2. Dr.Sheela Mallika rani, M.D., Anaesthesia , Medical Superintendent Govt. Rajaji Hospital, Maudrai</p> <p>3.Dr.V.T.Premkumar,MD(General Medicine) Professor & HOD of Medicine, Madurai Medical & Govt. Rajaji Hospital, College, Madurai.</p> <p>4.Dr.S.R.Dhamotharan, MS., Professor & H.O.D i/c, Surgery, Madurai Medical College & Govt. Rajaji Hospital, Madurai.</p> <p>5.Dr.G.Meenakumari, MD., Professor of Pathology, Madurai Medical College, Madurai</p> <p>6.Mrs.Mercy Immaculate Rubalatha, M.A., B.Ed., Social worker, Gandhi Nagar, Madurai</p> <p>7.Thiru.Pala.Ramasamy, B.A.,B.L., Advocate, Palam Station Road, Sellur.</p> <p>8.Thiru.P.K.M.Chelliah, B.A., Businessman,21, Jawahar Street, Gandhi Nagar, Madurai.</p>	<p>Name of the Candidate : Mahalakshmi. G</p> <p>Course : M.Sc., Obstetrics and Gynaecological Nursing</p> <p>Period of Study : 2016-2018</p> <p>College : MADURAI MEDICAL COLLEGE</p> <p>Research Topic : A study to evaluate the effectiveness of Betadine vs chlorhexidine perineal care on reducing the occurrence of urinary tract infection among mothers with indwelling catheter at post operative caesarean ward,government rajaji hospital Madurai</p> <p>Ethical Committee as on : 02.02.2018</p> <p>The Ethics Committee, Madurai Medical College has decided to inform that your Research proposal is accepted.</p> <p><i>[Signature]</i> Member Secretary</p> <p><i>[Signature]</i> Chairman</p> <p><i>[Signature]</i> Dean / Convenor</p> <p>P. Dr. V. Nagaraajan M.D., MNAMS, D.M., Dsc.,(Neuro), Dsc (Hon) CHAIRMAN IEC - Madurai Medical College Madurai</p> <p>DEAN Madurai Medical College Madurai-20</p>



APPENDIX –II

Content Validity Certificates

CERTIFICATE OF VALIDATION

This to certify that the tool

SECTION A : Socio demographic variable

SECTION B : UTI clinical symptoms and analysis scoring system

Prepared for data collection by Ms.Mahalakshmi G, II year M.Sc(Nursing) student, college of nursing, Madurai medical college, Madurai , who has undertaken the study field on thesis entitled “Effectiveness of betadine vs chlorhexdine perineal care on reducing urinary tract infection among patients with indwelling catheter in post operative caesarean ward at Government Rajaji hospital , Madurai” has been validated by me.

NAME : Prof. M. SHABERABANU

DESIGNATION : PRINCIPAL

DATE : 04-06-2018

SIGNATURE OF EXPERT

PRINCIPAL

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

CERTIFICATE OF VALIDATION

This to certify that the tool

SECTION A : Socio demographic variable

SECTION B : UTI clinical symptoms and analysis scoring system

Prepared for data collection by Ms.Mahalakshmi G, II year M.Sc(Nursing) student, college of nursing, Madurai medical college, Madurai , who has undertaken the study field on thesis entitled "Effectiveness of betadine vs chlorhexidine perineal care on reducing urinary tract infection among patients with indwelling catheter in post operative caesarean ward at Government Rajaji hospital , Madurai" has been validated by me.

Sudha K.N.

SIGNATURE OF EXPERT

NAME : MS. SUDHA K.N., M.Sc(N)Nsg,

DESIGNATION: ASSOC. PROFESSOR,
RASS ACADEMY COLLEGE OF NURSING
POOVANTHI.

DATE : 18.5.18



CERTIFICATE OF VALIDATION

This to certify that the tool

SECTION A : Socio demographic variable

SECTION B : UTI clinical symptoms and analysis scoring system

Prepared for data collection by Ms.Mahalakshmi G, II year M.Sc(Nursing) student, college of nursing, Madurai medical college, Madurai , who has undertaken the study field on thesis entitled “Effectiveness of betadine vs chlorhexidine perineal care on reducing urinary tract infection among patients with indwelling catheter in post operative caesarean ward at Government Rajaji hospital , Madurai” has been validated by me.

SIGNATURE OF 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

DATE : 12.06.2018

CERTIFICATE OF VALIDATION

This to certify that the tool

SECTION A : Socio demographic variable

SECTION B : UTI clinical symptoms and analysis scoring system

Prepared for data collection by Ms.Mahalakshmi G, II year M.Sc(Nursing) student, college of nursing, Madurai medical college, Madurai , who has undertaken the study field on thesis entitled "Effectiveness of betadine vs chlorhexidine perineal care on reducing urinary tract infection among patients with indwelling catheter in post operative caesarean ward at Government Rajaji hospital , Madurai" has been validated by me.

SIGNATURE OF EXPERT

NAME : Dr. N. SUMATHI, MD, DGO,

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

DESIGNATION: Professor .

DATE :

CERTIFICATE OF VALIDATION

This to certify that the tool

SECTION A : Socio demographic variable

SECTION B : UTI clinical symptoms and analysis scoring system

Prepared for data collection by Ms.Mahalakshmi G, II year M.Sc(Nursing) student, college of nursing, Madurai medical college, Madurai , who has undertaken the study field on thesis entitled “Effectiveness of betadine vs chlorhexidine perineal care on reducing urinary tract infection among patients with indwelling catheter in post operative caesarean ward at Government Rajaji hospital , Madurai” has been validated by me.


SIGNATURE OF EXPERT

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

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

DESIGNATION : Professor .

DATE :

APPENDIX – III

INFORMED CONSENT FORM

NAME:

DATE:

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

Signature of participants

INFORMED CONSENT FORM

ஓப்புதல் அறிக்கை

பெயர்:

நாள்:

எனக்கு இந்த செவிலிய ஆய்வினைப் பற்றிய முழு விவரம் விளக்கமாக எடுத்துரைக்கப்பட்டது. இந்த ஆய்வில் பங்கு கொள்வதில் உள்ள நன்மைகள் மற்றும் தீமைகள் பற்றி முழுமையாக புரிந்து கொண்டேன். இந்த ஆய்வில் தானாக முன்வந்து பங்கு பெறுகிறேன். மேலும் எனக்கு இந்த ஆய்விலிருந்து எந்த சமயத்திலும் விலகிக்கொள்ள முழு அனுமதி வழங்கப்பட்டுள்ளது. என்னுடைய பெயர் மற்றும் அடையாளங்கள் ரகசியமாக வைத்துக்கொள்ளப்படும் என்றும் எனக்கு உறுதியளிக்கப்பட்டுள்ளது.

கையொப்பம்

APPENDIX-IV

LETTER SEEKING PERMISSION TO CONDUCTING THE STUDY

From,

Mahalakshmi G
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 operative caesarean 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 betadine versus chlorhexidine perineal care on reducing the occurrence of urinary tract infection among patient with indwelling catheter in postoperative caesarean ward 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,


(Mahalakshmi G)


18/05/18
Com-oliva/25/18
18/5/18 Forwarded
S-P-
18/5/18


19/5/18
PROF. & HOD
DEPT. OF O & G
MADURAI MEDICAL COLLEGE
MADURAI

APPENDIX-V

SEMI STRUCTURED INTERVIEW SCHEDULE

SECTION - A

SOCIO DEMOGRAPHIC VARIABLES

Sample no:

1. Age in years
 - a) < 25
 - b) 26-30
 - c) 31-35
 - d) > 35
2. Educational status
 - a) No formal education
 - b) Primary education
 - c) Secondary education
 - d) graduate
3. Occupation
 - a) Home maker
 - b) Coolie
 - c) Self employment
 - d) Private employee
4. Religion
 - a) Hindu
 - b) Christian
 - c) Muslim
5. Use of Latrine
 - a) Personal
 - b) Public
 - c) Open field

SECTION – B

OBSTETRIC VARIABLES

1. Parity
 - a) Primi gravid
 - b) Multi gravid
2. Previous exposure of catheterization
 - a) Yes
 - b) No
3. Indications for catheterization
 - a) for surgical purpose
 - b) for monitoring purpose
4. Previous history of urinary tract infection
 - a) Yes
 - b) No
5. Duration of napkin changing
 - a) 6th hourly
 - b) 8th hourly
 - c) 10th hourly

SECTION – C
MODIFIED URINARY TRACT INFECTION CLINICAL SYMPTOM
AND ANALYSIS SCORING SYSTEM

SNO	FINDINGS	PARAMETERS	POINTS	SCORE
1	Temperature	Above Upto 100 ⁰ F	1	
		Upto 100 ⁰ F	0	
2	Supra pubic tenderness	Present	1	
		Absent	0	
3	Pus discharge from urethra	Present	1	
		Absent	0	
4	Cloudy urine	Present	1	
		Absent	0	
5	Bad odor urine	Present	1	
		Absent	0	
6	Pus cells : _____ cells / HPF	Abnormal	1	
		Normal	0	
7	Epithelial cells : _____ cells / HPF	Abnormal	1	
		Normal	0	
8	Bacteria : _____	Present	1	
		Absent	0	
9	Casts : _____ (specify)	Present	1	
		Absent	0	

10	Other abnormal cells : _____ (specify)	E.Coli	1	
		Others	0	

SCORING KEY:

SCORE	LEVEL OF INFECTION
1-3	Mild
4-7	Moderate
8-10	High

APPENDIX – VI

எண்:

தன்னிலை குறிப்புகள்

1. வயது வருடங்களில்
அ) < 25
ஆ) 26-30
இ) 31-35
ஈ) 35 வயதுக்குமேல்
2. கல்வித்தகுதி
அ) படிக்கவில்லை
ஆ) தொடக்கக்கல்வி
இ) உயர்நிலைக்கல்வி
ஈ) பட்டப்படிப்பு
3. தொழில்
அ) குடும்பத்தலைவி
ஆகூலி
இ) சுயதொழில்
ஈ) தனியார்வேலை
4. வசிப்பிடம்
அ) கிராமபுறம்
ஆ) நகர்புறம்
5. கழிப்பறை உபயோகித்தல்
அ) சுயகழிப்பறை
ஆ) பொதுகழிப்பறை
இ) திறந்தவெளி

APPENDIX – VII

Certificate of English Editing

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This to certify that the dissertation “ A Study To Evaluate The Effectiveness Of Betadine Versus Chlorhexidine Perineal Care On Reducing The Occurrence Of Urinary Tract Infection among patient with Indwelling Urinary Catheter In Post Operative Caesarean Ward At Government Rajaji Hospital Madurai-20” done by Miss. Mahalakshmi G, M. Sc Nursing II year student, college of nursing , Madurai medical college, Madurai -20 has been edited for English language appropriateness.

Name : A. SUGANTHI.

Designation : B.T. ASST. (ENGLISH)

Institution : CORPORATION HIGH SCHOOL,
TALAKULAM, MADURAI - 02.

A. Suganthi.
Signature

TALAKULAM CORPORATION
HIGH SCHOOL
MADURAI - 625 002

APPENDIX – VIII

Certificate of Tamil Editing

CERTIFICATE OF TAMIL EDITING

TO WHOM SO EVER IT MAY CONCERN

This to certify that the dissertation “ A Study To Evaluate The Effectiveness Of Betadine Versus Chlorhexidine Perineal Care On Reducing The Occurrence Of Urinary Tract Infection among patient with Indwelling Urinary Catheter In Post Operative Caesarean Ward At Government Rajaji Hospital Madurai-20” done by Miss. Mahalakshmi G, M. Sc Nursing II year student, college of nursing , Madurai medical college, Madurai -20 has been edited for Tamil language appropriateness.

Name : H. G. 

Designation : B.T. ASST


Signature

Institution : CORPORATION HIGH SCHOOL.
TALAKULAM , MADURAI - 2

TALAKULAM CORPORATION
HIGH SCHOOL
MADURAI- 625

APPENDIX - IX

DATA COLLECTION AMONG MOTHERS WITH INDWELLING CATHETER



EXPLAINING THE PROCEDURE BEFORE GIVING INTERVENTION TO POST OPERATIVE MOTHER.

