

DISSERTATION ON

**A STUDY TO ASSESS THE EFFECTIVENESS OF
TENDER COCONUT WATER IN REDUCING PAIN
DURING MICTURITION AMONG CHILDREN WITH
URINARY TRACT INFECTION ADMITTED IN
UROLOGICAL WARD AT INSTITUTE OF CHILD
HEALTH AND HOSPITAL FOR CHILDREN,
CHENNAI.**

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CERTIFICATE

This is to certify that this dissertation titled **A study to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children, Chennai** is a bonafide work done by Mrs.M.K.Nirmala devi, II year M.Sc (N) student, College of Nursing, Madras Medical College, Chennai submitted to the **Tamilnadu Dr.M.G.R Medical University, Chennai** In partial fulfillment of the requirements for the award of degree of master of science in Nursing ,Branch- II, Child health nursing, under our guidance and supervision during the academic period from 2015 -2016.

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ABSTRACT

TITLE : A study was to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward at Institute of Child Health and Hospital for Children, Chennai.

Children are the vulnerable group in the society; they need a prompt care and attention to prevent and minimize certain conditions like urinary tract infection. In this study the investigator adapted consuming of coconut water on reducing the pain during micturition.

Need for Study: Coconut water is traditionally prescribed for burning pain during urination, dysuria, gastritis, burning pain of the eyes, indigestion and hiccups or even expelling of retained placenta.

Objectives : To identify the socio demographic variables of the children, to assess the pain level during micturition before administration of tender coconut water in children with urinary tract infection, to evaluate the pain level during micturition after administration of tender coconut water in children with urinary tract infection, to determine the effectiveness of administration of tender coconut water on reducing pain among the children with urinary tract infection, to find association between the selected demographic variables with post test scores of reducing pain among the children with urinary tract infection.

Key Words: Tender Coconut Water, Urinary Tract Infection, Micturition Pain.

Methodology:

Research approach: Qualitative Approach

Study Design: Pre Experimental One group Pre test and Post test

Sampling Technique: Non probability purposive sampling

Population: Children with urinary tract infection with micturition pain.

Tool: Wong baker faces pain rating scale

Data collection procedure: A study was carried out to find out the effectiveness of tender coconut water in treatment of UTI with micturition pain. Sixty samples were selected from the medical ward. Intervention was given thrice a day for three days. Pain was assessed before and after the intervention using Wong baker faces pain rating scale.

Data analysis: The data were analysed by using descriptive (mean, standard deviation, frequency and percentage) and inferential statistics (student paired and student independent 't' test and chi-square test).

Results: The finding showed that there is a significant improvement in children taking tender coconut water with p value of $t=4.282$.

Discussion: Hypothesis was proved by the great statistically significance occurs after administered of tender coconut water. The chi square test shows that there is statistically significant association between with selected demographic variable with previous hospitalization and religion.

Conclusion: Tender coconut water which contains antioxidants and diuretic properties and it is effective in the successful management of urinary tract infection of maturation pain.

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ABBREVIATIONS

UC	Urinary catheter
AEAC	Ascorbic acid equivalent anti oxidant capacity
BCR	Benefit cost ratio
TCW	Tender coconut water
CEB	Carbohydrate electrolyte beverage
UTI	Urinary tract infections
χ^2	Chi square
SD	Standard deviation
CI	Confidence interval

CHAPTER-I

INTRODUCTION

“He who plants a coconut tree, plants food and drink, vessels and clothing, a home for himself and a heritage for his children

- South Seas

Every child must be ensure the best start in life – their future and indeed the future of their communities, nations and the whole world depends on it. A child is a unique individual; he or she is not a miniature adult, not a little man or woman.

The urinary system is the body filtering system for removal of liquid wastes. Urinary tract infections (UTI) are common bacterial infection occurring in children. During the first year of life, the male to female ratio of Urinary tract infections is 3.5:1. Beyond 1-2 years, there is female preponderance with male to female ratio of 1:10. **(Clark et al 2010)**. The most risk factor that increase the child’s chance of developing a urinary tract infection include an abnormality in the structure and function of the urinary tract, poor toilet and hygiene habits, the use of bubble bath or soaps that irritate the urethra, bladder instability and infrequent voiding.

A urinary tract infection (UTI) occurs when there is an anatomical or A urinary tract infection (UTI) occurs when there is an anatomical or functional break in the host defense system allowing for the adherence, multiplication, and persistence of bacteria in part of the urinary tract. Depending on the site of infection, there is a potential for serious pathology, hence identifying the bacterial species, the antimicrobial susceptibility, the anatomic location and preventing urinary tract infections recurrence are essential for ensuring optimal patient outcomes. Although not universally accepted, microbiological documentation of bacteriuria does not equate to an automatic diagnosis of a

pathogenic urinary tract infection. Depending on bacterial characteristics such as expressed virulence factors, all bacteria will not activate a host response or ultimately cause disease. In human medicine, these subsets of bacteriuric individuals are diagnosed as having “asymptomatic bacteriuria” (ASB) **(Ananthanarayanan, Panicker et al 2014)**.

This differentiation between Urinary tract infections and asymptomatic bacteriuria is of clinical and microbiological importance for patient management, but has also become increasingly important because of the emergence of antimicrobial resistance among many common uropathogens. Antibiotics are not administered to human patients with asymptomatic bacteriuria. In many humans, untreated bacterial strains persist in asymptomatic patients for years without deleterious effects. Greater than 17% of elderly women and 5% of adult women carry bacteria within their urinary tract without symptoms of a Urinary tract infection.**(Ananthanarayanan, Panicker et al 2014)**. Importantly, these nonpathogenic bacteria, which have presumably co-evolved within the human urogenital tract, are hypothesized to convey a degree of protection against urinary tract colonization with more virulent bacteria. Antibiotic administration to patients with ABU can result in the subsequent development of pathogenic infections of the lower urinary tract.

A urinary tract infection causes irritation of the lining of the bladder, urethra, ureters and kidneys, just like the inside of the nose or the throat becomes irritated with a cold. In infant, the signs of urinary tract infection may not be clear, since child cannot tell exactly how they feel. The child may have a high fever, be irritable, or cannot eat. An older child may complain of pain in the abdomen, low back pain, dysuria, malodorous urine and fever, pain under the side of the rib cage etc.

During 2008 – 2010, there were steady increases in the incidence of asymptomatic bacteriuria in school going children. The study showed that 27.6% of boys and 72.4% of girls were investigated for asymptomatic

infection. This study was done by **(Kumar C S V et al 2010)** in Kasturba Medical College.

The knowledge of the parents regarding the urinary tract infection will help to reduce the prevalence and early diagnosis, treatment aims to prevent destruction and scarring of renal parenchyma. It is very important to detect a urinary tract infection in a child of any age, because of the chance, that it may cause permanent kidney damage.

Coconut plant has long been recognized as a valuable source of various commodities for human life, the water of tender coconut technically the liquid endosperm, is the most nutritious wholesome beverage that the nature has provided for the people of the tropics to fight the sultry heat **(Khan,2003)**.

Coconut water or coconut juice is a sweet refreshing drink taken directly from the inner part of coconut fruits **(Steiner and Desser, 2008)**. Tender coconut water is consumed by thousands of inhabitants of tropical regions. It is healthy, nutritious and most agreeable drink **(Marikkar and Madurapperuma, 2012)**. The demand for tender coconut water is spiralling rapidly as people are realizing the health benefits it offers. This refreshing drink is filled with many healthy natural nutrients which can enhance the body's metabolism and immunity and is used more as a health supplement **(Poduval, 2012)**.

It has long been believed that coconut water can cure disease and ensure good health. The effect of coconut water has been extensively studied since its introduction to the scientific community in the 1940s. In its natural form, it is a refreshing and nutritious beverage which is widely consumed due to its beneficial properties to health, some of which are based on cultural/traditional beliefs **(Janick and Paull, 2008; Sandhya and Rajamohan, 2008)**.

In the Indian Ayurvedic medicine, tender coconut was described as “unctuous, sweet, increasing semen, promoting digestion and clearing the urinary path **(Rethinam and Kumar, 2001)**. Coconut water is traditionally

prescribed for dysuria, gastritis, burning pain of the eyes, indigestion, hiccups or even expelling of retained placenta. In case of emergency in remote regions and during World War II, coconut water was used as a short term intravenous hydration and resuscitation fluid (**Campbell-Falcket *al.*, 2000 and Pummeret *al.*, 2001**). Tender Coconut Water is one of the first oral post operative foods soon after a patient is removed from parenteral feeding.

Coconut water has long been known for its therapy on urinary tract infections and on reproductive systems. It is reported to clear up bladder infections, remove kidney stones, and improve sexual vitality. Medical research has shown that the consumption of coconut water can be very effective in dissolving kidney stones. **Macalalag (1987)**, Director of the Urology Department of the Chinese General Hospital in the Philippines, says that coconut water has demonstrated its effectiveness in patients suffering from kidney and urethral stones. He reports that consuming coconut water only two to three times a week results in a significant reduction in stone size and expulsion, eliminating the need for surgery.

1.1 Need for the study:

Urinary tract infection is the common urologic disorder in children. Urinary tract infection may involve the urethra, bladder and/or the ureters, renal pelvis, calyces and renal parenchyma. It is estimated that 150 million urinary tract infections occur yearly on a global basis.

Boys are at greater risk for urinary tract infections on the first few months of life, but the risk decreases significantly after 2 years of age, Girls are at more risk as a result of variety of factors such as the close proximity of the female urethral meatus to the anus, and incomplete and in-coordinate voiding in school going girls which is often associated with constipation and encourages infection in the urinary tract the risk steadily decline as they cross childhood but the risk of non-febrile infection is higher during childhood .As many children are affected with urinary tract infection in all parts of the world.

Urinary tract infection (**Kunin, C.M., et al., 2002**) is an important cause of morbidity and mortality in Indian subjects, affecting all age groups across the life span. It was noticed that the incidence of urinary tract infections was 36.3 % in hospitalized patients and 16.5% in a non-hospitalized outpatient population group .

Table 1.1 Census of ICH Chennai ,.from 2010 to 2014.

1-12 years all children					0-28 days Newborn			
Sex	Total cases	Total primary cases	Total death	Total primary death	Total cases	Total primary cases	Total death	Total primary death
Male	1677	1170	16	0	11	5	0	0
Female	1183	818	18	2	4	2	0	0
Inter sex	0	0	0	0	0	7	0	0
Total	2860	1988	34	2	15	0	0	0

Its need for further investigation (**Parsons, C.L., 2007**) in order to provide proper care and to make the people aware of urinary tract infection. Prevention of urinary tract infection is most important to children. When the researcher was posted in urology ward, she felt the need to reduce the pain level among urinary tract infection children by administering tender coconut water orally. Coconut water is traditionally prescribed for burning pain during urination, dysuria, gastritis, burning pain of the eyes, indigestion and hiccups or even expelling of retained placenta. So the researcher select this problem to administering tender coconut water orally to reduce the incidence rate of urinary tract infection.

1.2 Statement of the Problem

A study to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children, Chennai.

1.3 Objectives

1. To identify the socio demographic variables of the children.
2. To assess the pain level during micturition before administration of tender coconut water in children with urinary tract infection.
3. To evaluate the pain level during micturition after administration of tender coconut water in children with urinary tract infection.
4. To determine the effectiveness of administration of tender coconut water on reducing pain among the children with urinary tract infection.
5. To find association between the selected demographic variables with post- test scores of reducing pain among the children with urinary tract infection.

1.4 Operational Definitions:

Assess -It refers to determine the process of providing tender coconut water in reducing pain during micturition among children with urinary tract infection.

Effectiveness-It refers the outcome impact of reducing pain during micturition among children with urinary tract infection after administration of tender coconut water.

Reduction-It refers that the amount of pain reduced during micturition among children with urinary tract infection after administration of tender coconut water.

Pain-It refers that the unpleasant or untoward feelings like pain is experienced by the children while passing out urine. These impulses are conveyed to the brain by sensory neurons which is assessed by faces pain scale.

Tender coconut water-It refers that tender coconut water is a clear liquid inside immature green coconuts that forms naturally inside the shell of a coconut, contains sugar, fiber, protein, antioxidants, vitamins, and minerals, provides an isotonic electrolyte balance, making it a nutritious food with therapeutic effect like reducing pain during micturition.

Micturition-It refers that children have an act of passing out urine with pain.

1.5 Assumptions:

- Tender coconut water may be reducing pain among UTI children during micturition.
- Tender coconut water has diuretic property.

1.6 Hypotheses:

H1: There will be statistically significant difference between pre and post reduction of pain in children during micturition after the administration of tender coconut water.

H2: There will be statistically significant association between selected demographic variables with the post-test values of reduction of pain in children during micturition after the administration of tender coconut water.

1.7 Delimitations:

- Data collection is four weeks.
- This study is limited to children of only those admitted in urological ward at, “Institute of Child Health and Hospital for Children , Chennai.

CHAPTER–II

REVIEW OF LITERATURE

Literature review is a key step in the research process. The main goal of literature review is to develop a strong knowledge base to carry research activities in the educational and clinical practice. This chapter deals with the relevant review of literature regarding the different aspect of care of preterm babies.

2.1. Review of Literature

2.2. Conceptual Frame Work

2.1. Review of Literature

2.1.1. Studies related to prevention and management of urinary tract infection in children.

2.1.2. Studies related to knowledge and practices of the parents on prevention of urinary tract infection in children.

2.1.3. Studies related to effectiveness of tender coconut water benefits.

2.1.1 Studies related to general information about the causes and incidences, prevention and management of urinary tract infection in children.

2.1.1. Studies related to prevention and management of urinary tract infection in children.

Nader Pashapour et al (2015) conducted a study on “Urinary Tract Infection in Term Neonates with Prolonged Jaundice”. The aim of this study was to evaluate the frequency of urinary tract infection (urinary tract infections) in neonates with prolonged jaundice. Newborn infants with jaundice lasted more than 2 weeks were included in this study. Patients who had other signs or symptoms were excluded. The study showed that out of 100 neonates, who were evaluated, 43 were boys and 57 were girls. All of the neonates were

breastfed. Six suffered from urinary tract infections (4 boys and 2 girls). Reflux was detected on voiding cystourethrography in 1 and cortical defect in the kidney on renal scan in 2 boys.

Song, J. and S.N. Abraham,(2013) investigated on urinary tract infection is an important cause of bacteremia due to gram negative organisms. This is supported by the study conducted in Ayub Teaching Hospital, Pakistan on “Organism causing Urinary Tract Infection in pediatrics patients”. 100 patients of either sex, ranging from neonatal period to 15 years of age were studied. Urine colony count and culture were done on suspected cases. The study shows that urinary tract infections were common among females except in neonatal period. Escherichia coli was the most common organisms isolated followed by Klebsiella (13%), Proteus (11%), Staphylococcus (4%) and Pseudomonas (1%). Proteus was isolated from male only.

Quach C et al (2013) conducted a study on “Risk Factors Associated with Catheter-Related Urinary Tract Infections in a Pediatric Intensive Care Unit” at the Montreal Children's Hospital, Canada who had a urinary catheter (UC). A total of 162 patients (54 cases, 108 controls) with a mean age of 54 months (median 19; SD 67 months) were included in this study. The study revealed that duration of catheterization and female gender were the only predictors associated with an increased risk of urinary tract infections.

William et al (2013) conducted a study on “Long term antibiotics prevent recurrent urinary tract infection in children”. The aims of the study were to determine the efficacy and harms of the long term antibiotics for preventing recurrent urinary tract infection in children. This study showed that the duration of antibiotics prophylaxis treatment varied from 10 weeks to 12 months. Compared to placebo/ no treatment, antibiotics reduced the risk of repeat positive urine culture. No side effects were reported.

Mitra et al (2012) conducted a study on "Urinary tract infection and predisposing factors in children" at Nephrology Clinic of Dr. Sheikh Children's Hospital. A total 185 children were included. The patients were divided into 4 age groups including less than 1 month, 2-24 months, 25 months to 5 years and more than 6 years. All the patients underwent renal ultrasonography and voiding- cystourethrography. The study revealed that out of 183 patients, 130 cases (71%) were female and 56 patients (29%) males. Vesicourethral reflex was the most common predisposing factor in both genders (46.9% in girls and 48.8% in boys). Voiding dysfunction in girls and urinary obstruction in boys were found with significant difference.

(Izabel Cristina de Almeida Rodrigues et.al (2011) conducted a survey was conducted of the data with reference to uroculture exams of patients attended at the Military Police Hospital of the State of Goias, Brazil, in the period from January, 1998 to December, 2008, in which it was verified that of the 10,162 urine samples, 1,506 (14.82%) were positives, while 8,656 (85.18%) presented no growth of microorganisms. It results are verified that the female sex was the most affected (79.4%). The most frequent Gram negative bacteria were Escherichia coli (63.08%) and Enterobacter sp. (6.31%) and the Gram-positive bacteria were Staphylococcus saprophyticus (4.52%) and Staphylococcus aureus (3.19%). It concludes that bacterial susceptibility to antimicrobial agents, it was noted that Escherichia coli and Enterobacter sp. Presented a higher sensitivity index in decreasing order to Ciprofloxacin, Norfloxacin and Ceftriaxon.

Jawale.S et al (2011) conducted a study on "Roles of circumcision among children" Mumbai. The purpose of the study was to reduce the urinary tract infections in the patient with congenital urinary tract anomalies in spite of surgical treatment for the primary disease. 30 patients were included in this study. The study revealed that before circumcision, all the patients in the study group had positive urine culture. After circumcision out of 30 patients 26.6 %

patients showed negative urine culture at the end of the first week and 95.7% at the end 12 weeks. This finding was found to be statistically highly significantly.

Yadav et al (2011) conducted a study on “Management of recurrent urinary tract infection in female children” at Chandigarh. The purpose of the study was to provide antibiotics followed by urethral dilation. 25 female’s children with persistent or recurrent urinary tract infections, despite repeated antibiotic therapy were involved in the study. Urine culture and blood urea were done in all the cases, cystourethrogram in 23, IVP in 22 and dilatation of urethra in all the cases. The study revealed that with dilatation of urethra followed by antibiotics for 12 weeks, 19 out of 25 cases (76%) were free of symptoms and the urine was without infection in at least 2 follow-ups of 6 months' interval. Six of the 25 cases (24%) were re-admitted with second infection and required repeat dilatation and antibiotic therapy.

Ubirajara et al (2011) conducted a study on "Etiology of urinary tract infection in school children”, the study shows that Vesico urethral dysfunction was diagnosed in 39 (87%) of 45 children. Among these 39 patients had voiding urgency, 30 (77%) had urinary incontinence, 12 (31%) pollakiuria and 3 (8%) present infrequent voiding .

Alejandro et al (2010) conducted a study on "Imaging studies after a first febrile Urinary tract infection in young children". A total 309 children were evaluated, an ultra sonogram and renal scan were obtained within 72 hours of diagnosis, and contrast voiding cystourethrography was performed one month later. This study revealed that the ultrasonographic results were normal in 88% of the children (272 of 309); 39% of children who underwent cystourethrography (117 of 302) had Vesico urethral reflux.

Pead L et al (2010) conducted a study on “Urinary tract infection in children on one health district” at Public Health Laboratory, St. Mary Hospital Portsmouth. Urine specimens were studied for culture and the result of imaging. A total of 89,086 children under 12 years of age were included. The study revealed that 12,551 urine specimens were submitted from 7450 children, 3138 boys and 4312 girls, 2238 children had infection or sterile pyuria. 996 (45%) of the children without infection or pyuria were already known to have urinary tract abnormalities and 114 children had newly identified abnormalities. 50 (44%) had no pyuria with newly identified abnormalities.

2.1.2 Studies related to knowledge and practices of the parents on prevention of urinary tract infection in children.

Amal Al Tenaiji et al (2015) conducted a cross sectional study to assess current knowledge, attitudes and behavior of the parents towards antibiotic use for urinary tract infections among children. An interviewer-administered questionnaire was used and data was analyzed statistically. 15% of participants knew that antibiotics are used to treat infections. 71% did not know the concept of antibiotic resistance and those who knew this concept were highly educated. Half of the participants did not know that using antibiotics in every febrile illness could lead to antibiotic resistance. 48% thought that antibiotics were often needed for common cold symptoms. 30% had requested antibiotics and 20% had consulted another doctor to get antibiotics. 21% had given their children antibiotics without doctor's prescription. 31% did not follow their doctor's instructions, 24% did not complete the full course and 21% shared antibiotics between their children. This study showed that parents often have inadequate knowledge regarding antibiotic use for urinary tract infections among children. Providing antibiotic awareness was found to significantly improve behavior. Therefore, parents' education is needed to reduce unnecessary antibiotic prescription in the community.

Lynster C T Liaw et al (2013) conducted a study on “Home collection of urine for culture from infants with urinary tract infection by three methods”. Parents of children aged 1 to 18 months volunteered to collect urine at home by pads, bags, and clean catch in a randomized order, on one day. The study had ethics committee approval. Demonstrations and instruction sheets were given. Parents washed their hands before each procedure and the child's perineum before each collection. Pads were placed inside the nappy and checked every 10 minutes until wet (but not soiled), then urine aspirated with a syringe. Bags were applied and inspected every 10 minutes and removed to decant the urine. For clean catch samples, infants were nursed with a sterile bottle ready. Forty four parents attempted collections (29 boys, median age 4 months, range 1 to 18 months). No samples were obtained from one baby with diarrhea, and no other child had a urine infection. Bacterial counts were typically reported as "insignificant" or "no growth" from 31 (70%) pads, 29 (66%) bags, and 33 (75%) clean catch collections. Seven samples from pads, eight from bags, and one from clean catch collection had contamination. Nine samples (8%) from five children (four boys) were infected.

Diane Owen et al (2012) conducted a study to assess parent understanding of urinary tract infections in their child and identify any delay perceived in the diagnosis, along with identifying how helpful parents had found any information that they had been given. The parents of children aged less than 2 years being investigated in one out-patient department following proven urinary tract infections. A semi-structured questionnaire was given to parents at first attendance (quantitative data) and content analysis of qualitative data was carried out. Fifty-two out of 84 parents responded (response rate 64%), 45 (86.5%) felt that they had been given a full explanation of the significance of urinary tract infections in childhood. About 40% felt that clean catch was the easiest method of obtaining a urine sample from their child. Although the quantitative data were positive, several themes were identified in

the qualitative data, relating to lack of awareness, delay in investigation by health professionals and issues regarding the information that had been imparted to parents.

S Struthers et al (2011) conducted a study to determine whether parental reporting of smelly urines of any relevance to the diagnosis of urinary tract infections in children less than 6 years of age. Parents whose children were having urine collected as part of their admission to a large district hospital were given a simple questionnaire to complete regarding the current smell of their child's urine. Parents were asked whether their child's urine smelled different from usual or had particular smell. Microscopy and culture results of the child's urine were compared to their parent's questionnaire answers to see if there was a association between parental reporting of a different or particular urine smell and a diagnosis of urinary tract infections. The study revealed that one hundred and ten questionnaires and urine samples were obtained. Fifty two per cent of parents thought that their child's urine smelled different from usual or had a particular smell. Only 6.4% of children were diagnosed as having urinary tract infections .There was no statistically significant association between parental reporting of abnormal urine smell and diagnosis of urinary tract infections.

MirjamHarmsen et al (2010) conducted a study to provide insight into parents' awareness and knowledge about urinary tract infections (UTI's) in young children. Twenty interviews with parents who had a child recently diagnosed with urinary tract infections were audio taped and qualitatively analyzed. Most parents knew the typical symptoms related to urinary tract infections. The awareness that urinary tract infections can be a serious illness usually came to parents later, partly because health care workers often did not explicitly mention this. According to the parents, health care workers should be

more aware of urinary tract infections in children. Parents felt that health education or mass screening might not be desirable because it would increase anxiety or would be perceived as not relevant. Parents could not consistently recognize urinary tract infections in their children and were most times unaware of the possible consequences of a urinary tract infection.

2.1.3 Studies related to effectiveness of tender coconut water

Manilkarazapota (2014) conducted a recent study on the antioxidant ability of coconut water was by a few authors the increasing interest in the nutraceutical properties of natural products. Among 27 tropical fruits purchased in supermarkets and wholesale outlets in Singapore, coconut water had the lowest AEAC (L-ascorbic acid equivalent antioxidant capacity): 11.5 AEAC (mg·100 g⁻¹) and an ascorbic acid (AA) content of 0.7 mg·100 g⁻¹ [14]. The coconut kernel had higher values than the coconut water. The proportion of ascorbic acid in the AEAC of fruits varied greatly among species, from 0.06% in ciku to 70.2% in rambutan; it was only 6.1% for coconut water.

Muhammad anasothaman, et al., (2014) compared on new alternative substrate for vinegar production namely mature coconut water has been tested and was compared with 2 common substrates which were coconut sap and pineapple juice. Substrates such as sap and juices have been found to have high amount of total soluble solids which corresponding to high sugar content in the substrates which is more than 14°Brix. Therefore, both substrates could be directly used for vinegar production without requirement of other carbon sources. However, coconut water which showed low Brix value need to be adjusted to 14°Brix by adding sucrose prior to the fermentation process. Substrates fermented with *Saccharomyces cerevisiae* have yielded 7-8% of alcohol within 7-10 days aerobic incubation at room temperature. The alcoholic medium were then used as a seed broth for acetic fermentation with

Acetobactoracetias inoculums and fermented for approximately 2 months to obtain at least 4% of acetic acid. Investigation on the effect of inoculum sizes and implementation of back-slopping technique were performed to improve the processing method for coconut water vinegar production. The results show that 10% of inoculum size was the best for acetic acid fermentation and the back-slopping technique has helped to reduce the process time of coconut water vinegar production.

S.R Priya and Lalitha Ramaswamy (2014) investigated on Tender coconut water is a refreshing drink with electrolytes (ionic mineral) similar to human plasma. This refreshing drink is filled with many healthy natural nutrients which can enhance the body's metabolism and immunity and is used more as a health supplement. The important significant and useful components in coconut water are cytokinins. The potential anti-cancer properties of specific cytokinins could bring encouraging and novel perspectives in finding cures for the different types of cancers. The recent discovery of other medicinal values of coconut water signifies a good potential in improving human health. Coconut water has recently caught on among athletes, health freaks and urbanites in many developed countries. An increasing international demand for this product could be a highly positive issue for thousands of Asian small farmers. The mineral composition and reasonable total sugar content make coconut water a natural isotonic sports drink.

GenaroD.Omo (2013) conducted a study were the finger pepper, tomato, bitter gourd, squash and bottle gourd and the treatments are as follows: 0 fertilizer + 0 coconut water (Control); Sprayed with 100% Concentration of Mature Coconut Water; Applied with 100% Recommended Rate (RR) Inorganic Fertilizer; Applied with 75% RR Inorganic Fertilizer + Sprayed with 25% Concentration of Mature Coconut Water; Applied with 75% RR Inorganic Fertilizer + Sprayed with 50% Concentration of Mature Coconut Water; Applied with 75% RR Inorganic Fertilizer + Sprayed with 75% Concentration

of Mature Coconut Water; Applied with 75% RR Inorganic Fertilizer + Sprayed with 100% Concentration of Mature Coconut Water. All the vegetables (finger pepper, tomato, bitter gourd and squash) applied with 75% RR inorganic fertilizer and sprayed with 50% concentration of mature coconut water produced the highest fruit yield, highest value of fruit yield, highest value of fruit yield increased over the control, and highest benefit cost ratio (BCR). Similarly, the bottle gourd plants applied with the same amount of inorganic fertilizer but sprayed with higher concentration of mature coconut water (75%) also produced the highest yield, highest value of fruit yield, highest value of fruit yield increase and BCR too.

Kalman DS, Feldman S, Krieger DR, Bloomer RJ.(2012) studied on comparison of coconut water and a carbohydrate-electrolyte sport drink on measures of hydration and physical performance in exercise-trained men. Following a 60-minute bout of dehydrating treadmill exercise, 12 exercise-trained men (26.6 ± 5.7 yrs) received bottled water (BW), pure coconut water (VitaCoco: CW), coconut water from concentrate (CWC), or a carbohydrate-electrolyte sport drink (SD) [a fluid amount based on body mass loss during the dehydrating exercise] on four occasions (separated by at least 5 days) in a random order, single blind (subject and not investigators), cross-over design. Hydration status (body mass, fluid retention, plasma osmolality, urine specific gravity) and performance (treadmill time to exhaustion; assessed after rehydration) were determined during the recovery period. Subjective measures of thirst, belatedness, refreshed, stomach upset, and tiredness were also determined using a 5-point visual analog scale. It reveals that subjects lost approximately 1.7 kg (~2% of body mass) during the dehydrating exercise and regained this amount in a relatively similar manner following consumption of all conditions. No differences were noted between coconut water (CW or CWC) and SD for any measures of fluid retention ($p > 0.05$). Regarding exercise performance, no significant difference ($p > 0.05$) was noted between

BW (11.9 ± 5.9 min), CW (12.3 ± 5.8 min), CWC (11.9 ± 6.0 min), and SD (12.8 ± 4.9 min). In general, subjects reported feeling more bloated and experienced greater stomach upset with the CW and CWC conditions.

Md. AbdullahilBaque, et al., (2011) conducted a study on an immensely useful technique was established to elucidate suitable culture conditions for in vitro micro propagation of *Calanthe* hybrids by using modified Hyponex media. Among the light emitting diodes (LEDs), the mixture of blue plus red light efficiently enhanced in vitro growth of the plantlets, whereas inhibitory effect on the plantlets growth was observed under the mixture of red plus far-red light. However, the effect of light quality on the growth of plantlets was more pronounced in 'Bukduseong' × 'Hyesung' hybrid compared to 'Chunkwang' × 'Hyesung'. Of the various gradients of sucrose tested (0, 7.5, 15, 30 and 60 g l⁻¹), 15 g l⁻¹ sucrose was proven suitable concentration for enhancing growth and growth attributes of 'Bukduseong' × 'Hyesung', while 15 and 30 g l⁻¹ sucrose were regarded as an optimal concentration for in vitro growth of the plantlets of 'Chunkwang' × 'Hyesung' hybrid. Although, higher sucrose concentration (60 g l⁻¹) enhanced root growth but induced plantlets abnormality. In addition, as a source of natural product, 50 ml l⁻¹ coconut water effectively enhanced plantlets growth of both hybrids compared to the relative control (without coconut water). After 8 weeks of culture, when the plantlets were transferred to the green house, 85% survivability of the plantlets was achieved upon hardening.

Patrick S. Michael (2011) Investigated on embryogenic callus initiation and plant regeneration in sweet potato in vitro has been accomplished through various amendments with supplements. Such amendments include use of appropriate growth regulator combinations or inclusion of other supplements that have the potentials to enhance callus initiation and shoot proliferation.

Coconut water has been reported to enhance callus induction, shoot development and multiplication in tissue culture of plants but has never been tried in sweet potato, which is still recalcitrant to most in vitro treatments reported. The objective of this study was to evaluate callus initiation; shoot proliferation and plant regeneration potentials of four different quantities of coconut water levels (0mL-1, 25mL-1, 50mL-1, 75mL-1 and 100mL-1) on three sweet potato cultivars of Papua New Guinea in vitro, on a modified Murashige and Skoog (MS) medium. The modified medium was supplemented with 3mgL-1 2, 4-dichlorophenoxyacetic acid and 0.5mgL-1 6-benzyl amino purine. The control medium was set without any of the coconut water levels. At coconut water levels lower than 75mL-, callus initiation and plant regeneration potentials of all the sweet potato cultivars were relatively low. At coconut water levels of 75mL-1 or higher, more than 85% of SK010, 75% of WHCH005 and 50% of PRAP496 initiated callus that were capable of proliferating into shoots. Shoot proliferation was also poor at lower coconut water levels. Shoot isolates that proliferated from calli at higher coconut water levels were able to grow to maturity.

2.2 conceptual frame work

The conceptual model selected for this study is based on “**Widenbach’s helping arts of clinical nursing theory**” adopted by Ernestine Widenbach’s in 1964, which aims to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward in, Institute of Child Health and Hospital for Children, Chennai.

The conceptualization of nursing practice according to the theory has three components which are as follows.

- Identification of the patient need to help
- Ministration of needed help
- Validation of action taken to meet the needed help.

Step –I- Identification

It refers to the determination of the clients need for help by the process of sample selection on the basis of inclusion criteria followed by assessing level of pain perception by children using ”Pre assessment of level of pain perception by children by numerical scale” among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children , Chennai.

Step –II- Ministration

It refers to the provision of needs help to fulfill the identified need.

It consist of three components

1. Central purpose
2. Prescription
3. Realities

4. Goal
5. Agent

Central Purpose

It refers to the effective of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children , Chennai.

Prescription

A prescription refers to the activity which specified both nature of action and the thinking that will lead to fulfillment of nurse's central purpose. This include the use of tender coconut water in reducing pain during micturition among children with urinary tract infection by its ayurvedic property, builds up immunity, improves kidney diuretic function and increases the flow and production of urine.

Realities

It indicates the factors that influence the nursing action.This include 5 realities

Agent

The investigator- child health specialist nurse.

Recipient

The children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children Egmore, Chennai.

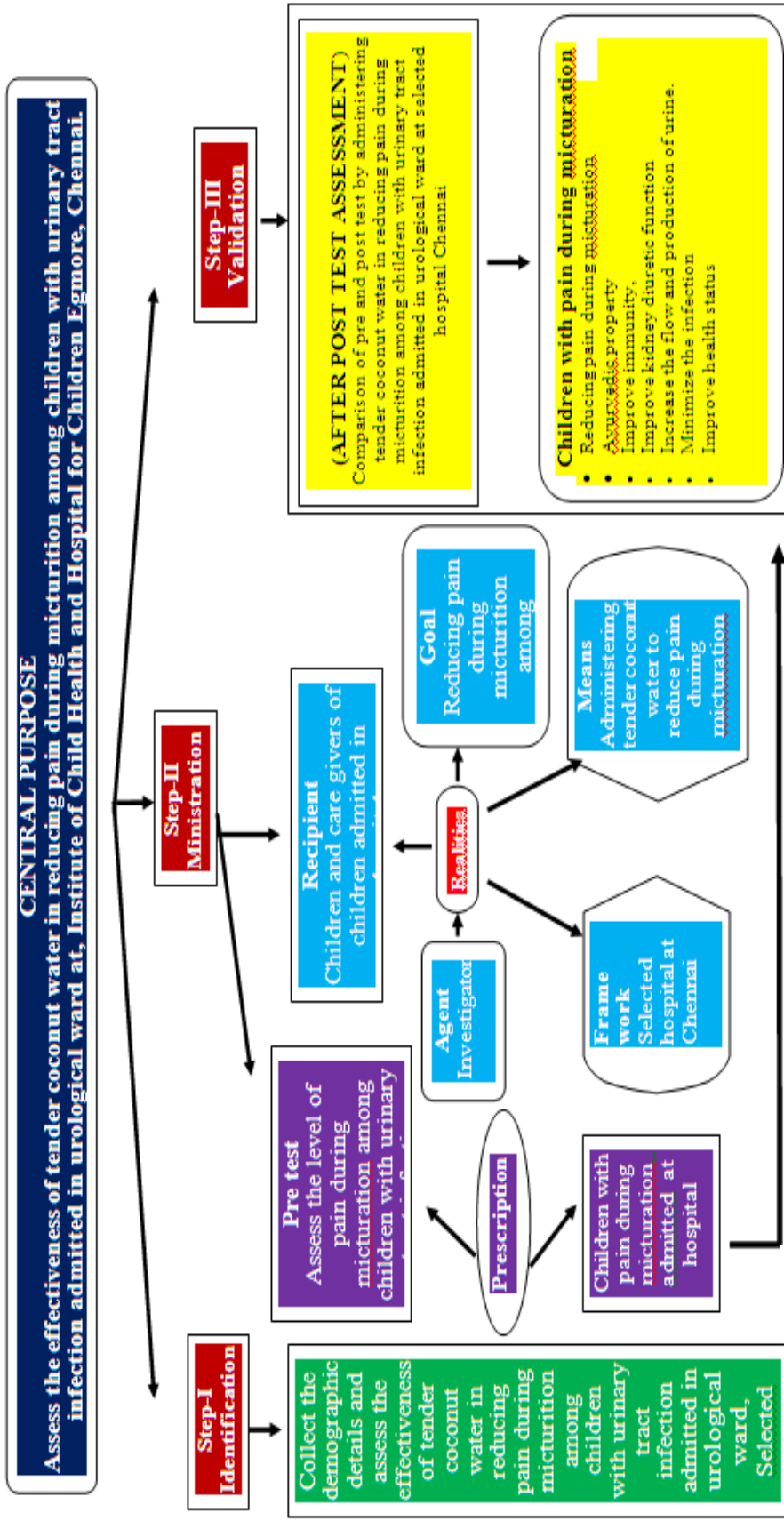
Goal

Reducing pain during micturition among children with urinary tract infection admitted in urological ward.

Mean

The administration of tender coconut water in reducing pain during micturition among children with urinary tract infection by its ayurvedic property, builds up immunity, improves kidney diuretic function and increase the flow and production of urine.

Modified conceptual frame work of Widenbach's helping art of clinical nursing theory -1964



CHAPTER –III

METHODOLOGY

This chapter deals with the description of methodology and different steps. It includes description of research approach, research design, setting, sample and sampling techniques, development and description of tools, development of administration of tender coconut water, pilot study, data collection and plan for data analysis.

3.1 Research Approach

Research approach was Quantitative research approach.

3.2 Data Collection Period

The study was conducted for a period of four weeks.

3.3 Study Setting

The study was conducted in urological ward at, Institute of Child Health and Hospital for Children, Chennai.

3.4 Study Design

The research design adopted for this study was pre- experimental, one group pretest and post-test design.

Selected group	Pre-test	Intervention	Post-test
Selected children had pain during micturition with urinary tract infection admitted in urological ward	Assess the level of pain during micturition among children (01)	Administration of tender coconut water (x)	Determine the level of reducing pain during micturition among children (02)

Schematic outline of research design

The symbols used were described as

O1: Pre-test to assess the level of pain during micturition among children before administering tender coconut water.

X: Administration of tender coconut water on reduction of pain reduced during micturition among children.

O2: post-test to determine the level of pain reduced during micturition among children after administering tender coconut water.

3.5 Study Population

In the present study the population comprised of children had pain during micturition with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children Chennai.

3.6 Sample Size

Sample size consists of 60 parents of children who had pain during micturition

3.7 Criteria for Sample selection

3.7.1 Inclusion Criteria

- Children between aged 1-12 years admitted in urological medical ward with pain during micturition.
- Parents who are willing to participate with their children in study.
- Parents of children with pain during micturition those understand and speak Tamil and English.

3.7.2 Exclusion Criteria

- Parents of children with pain during micturition those who cannot follow instructions.
- Parents of children with pain during micturition those who are not willing to participate.
- Parents of children with pain during micturition those whose children with renal disorders.

3.8 Sampling Technique

In this study non-probability purposive sampling technique was used in 60 samples of selected parents and children.

3.9 Research Variables

Variables are qualities, properties or characteristics of person, things or situations that changes or vary. The variables mainly included in this study are independent and dependent variable. Dependent variable explains the effects of independent variable.

Dependent variables

Level of pain during micturition among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children, Chennai.8.

Independent variables

Administration of tender coconut water was reducing of pain in children with micturition.

3.10 development and description of tool

Appropriate tool was selected with the help of review literature. Obtained expert opinion and content validity from Medical and Nursing and Statistical department and constructed tool. Pre testing of tool was done. During pilot study direct assessment of clients was performed during the data collection.

3.10.2 Description of tool

The tools comprised of two sections;

Section A: It consists of demographic data which included information of respondents about age, type of relationship to the child, religion, area of residence, educational status, occupation, monthly income, type of marriage, type of family and number of healthy children.

Section B: Wong baker faces pain rating scale. It include six faces . The score starts from 0, 2, 4, 6,8 and 10. Score 0 means no hurt, and 10 means hurt worst. The pain will be assessed before and after the tender coconut water administration with the help of this scale.

Score interpretation:

Description	Score
No hurt	0
Hurts little bit	2
Hurts little more	4
Hurts even more	6
Hurts whole lot	8
Hurts worst	10

Based on the scores the intensity of the pain is categorized as

0 : No pain: 1-2 : mild pain 3-6 moderate pain 7-10 severe pain

0 score indicates low level of pain and 7 -10 indicates high level of pain.

3.10 .3 Content Validity

Data collection tool is an instrument that measures the variables of interest of the study accurately, precisely, and sensitively. In the present study, content validity of the tool was obtained from medical and nursing experts in the field of child health. They suggested certain modifications in tool. After the modifications they agreed this tool for assessing children who had pain during micturition with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children , Chennai.

3.11 Ethical Consideration

Obtained approval from the Institute of Ethical Committee, Madras Medical College, Chennai. The parents were explained about the purpose and need of the study. They were assured that their details and answers will be used only for the research purpose. Further they were assured that their details will be kept confidentially. Thus the investigator followed the ethical guidelines, which were issued by the ethical committee. Written permission was obtained from all participants before conducting the study.

3.12 Pilot Study

Pilot study is a trial run for the main study, to test the reliability, practicability and feasibility of the study. Pilot study was conducted in a urological ward at, Institute of Child Health and Hospital for Children, Chennai. For pilot study 10 children were selected by purposive sampling technique. Facial pain scale was administered and tender coconut water given and post test conducted and data collected.

3.13 Reliability of the tool

Reliability refers to the degree to which the instrument yields the same results on repeated measures. It is then concerned with consistency, accuracy, stability, equivalence and homogeneity of the tool. (Polit and Hunger 2008) Reliability of the tool was determined by using split half method. Impact of disability score reliability correlation coefficient value is 0.80. This correlation

coefficient is very high and it is good tool for assessing the children who had pain during micturition with urinary tract infection admitted in urological ward at, children who had pain during micturition with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children , Chennai

3.14 Data collection procedure

The data collection was done from 16.07.15 to 15.08.15 (4 Weeks). The main study was conducted to meet the objectives of the present study.

- Self introduction
- Selection of Samples with Urinary Tract Infection with Micturition pain.
- Collection of demographical data
- Assessment of the pain with Wong Backer faces pain rating scale.

INTERVENTION PROTOCOL

Place : Institute of Child Health

Dose : Tender Coconut Water based on the age

- 50 ml for children of age group between 1-4 years
- 75 ml for children of age group between 4-8 years
- 100 ml for children of age group between 8-12 years

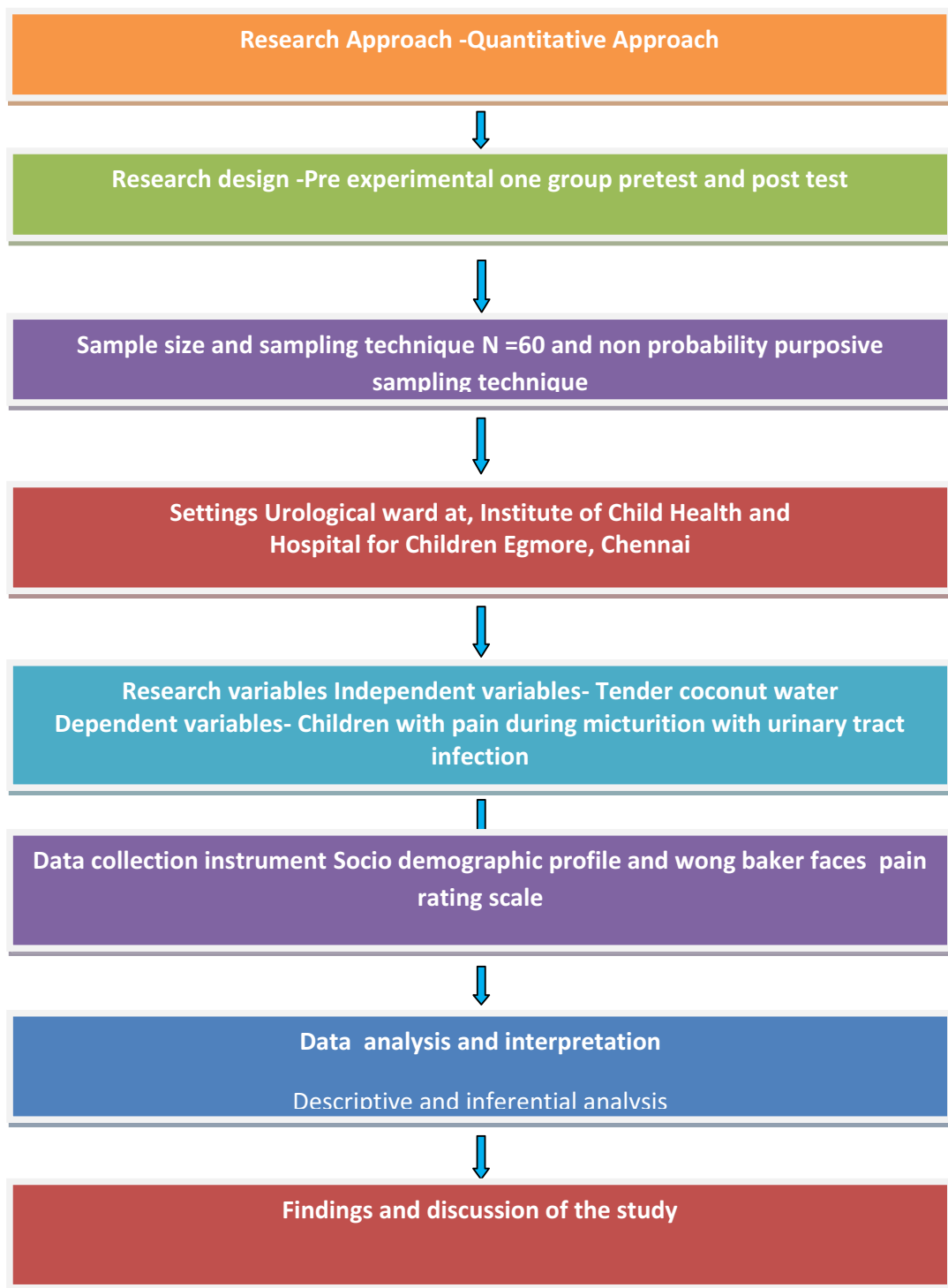
Duration : 3 days

Frequency : 3 times in a day

Administered by : Investigator

3.15 Data Entry and Analysis

The data were analysed using descriptive statistics like mean, standard deviation, frequency and percentage and inferential statistics like Chi-square test, student paired 't' test and unpaired 't' test.



CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 children at selected hospital, Chennai, to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection. The data collected for the study was grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

Organization of data

The findings of the study were grouped and analyzed under the following sessions.

Section A Description of the demographic variables.

Section B Assessment of pretest and post test level of pain during micturition among children with UTI.

Section C Effectiveness of tender coconut water in reducing pain during micturition among children with UTI.

Section D Association of post test level of pain during micturition among children with UTI with their selected demographic variables.

Section A:Description of the demographic variables.

Table 1: Distribution of demographic variables of children with UTI.

Demographic Variables	Frequency	Percentage
Age of the child		
1 - 4 years	35	58.33
4 - 8 years	16	26.67
8 - 12 years	9	15.00
Sex		
Male	44	73.33
Female	16	26.67
Place of residence		
Rural	42	70.00
Urban	18	30.00
Education of the child		
Primary	32	53.33
Secondary	26	43.33
Higher secondary	2	3.33
Education status of the mother		
Primary	7	11.67
Secondary	52	86.67
Higher secondary	1	1.67
Graduate	0	0.00
Monthly income		
<Rs.1802	58	96.67
Rs.1803 – 5386	1	1.67
Rs.5387 – 8988	0	0.00
Rs.8989 – 13494	1	1.67
>=Rs.13494	0	0.00
Type of the family		
Nuclear family	52	86.67
Joint family	7	11.67
Extended family	0	0.00
Single parent	1	1.67
Previous hospitalization		
Yes	51	85.00
No	9	15.00
Religion		
Hindu	44	73.33
Muslim	10	16.67
Christian	6	10.00
Others	0	0.00
Hygienic practice		
Self	16	26.67
By others	44	73.33
Type of food		
Vegetarian	0	0.00
Non-vegetarian	0	0.00

Demographic Variables	Frequency	Percentage
Mixed	60	100.00

The above table 1 shows that majority 35(58.33%) were in the age group of 1 – 4 years, 44(73.33%) were male child, 42(70%) were from rural area, 42(53.33%) were studying in primary, 52(86.67%) mothers were educated upto secondary level, 58(96.67%) had monthly income of <Rs.1802, 52(86.67%) belonged to nuclear family, 51(.85%) had previous history of hospitalization, 44(73.33%) were Hindus, 44(73.33%).

Section B: Assessment of pretest and post test level of pain during micturition among children with UTI.

Table 2: Frequency and percentage distribution of pretest level of pain during micturition among children with UTI

Pain	No Pain (0)		Mild Pain (1 – 2)		Moderate Pain (3 – 6)		Severe Pain (7 – 10)	
	No.	%	No.	%	No.	%	No.	%
Pretest	0	0	0	0	39	65.0	21	35.0
Post Test 1	0	0	3	5.0	53	88.33	4	6.67
Post Test 2	0	0	29	48.33	30	50.0	1	1.67
Post Test 3	0	0	42	70.0	18	30.0	0	0

The table 2 shows that in the pretest, majority 39(65%) had moderate pain and 21(35%) had severe pain during micturition.

In the post test 1, after the administration of tender coconut water, majority 53(88.33%) had moderate pain, 4(6.67%) had severe pain and 3(5%) had mild pain. In the post test 2, majority 30(50%) had moderate pain, 29(48.33%) had mild pain and only 1(1.67%) had severe pain. In the post test 3, majority 42(70%) had mild pain and 18(30%) had moderate pain during micturition.

Section C:Effectiveness of tender coconut water in reducing pain during micturition among children with uti.

Table 3: Comparison of pretest and post testpain scores during micturition among children with UTI

Knowledge	Mean	S.D	Paired ‘t’ Value
Pretest	6.26	1.49	t = 11.000 p = 0.000, S***
Post Test1	4.80	1.38	
Post Test 2	3.30	1.46	t = 8/548 p = 0.000, S***
Post Test 3	2.60	0.92	t = 4.282 p = 0.000, S***

***p<0.001, S – Significant

The table 3 shows that in the pretest, the mean score of pain during micturationwas 6.26 ± 1.49 whereas in the post test1 on day 1 the mean score of pain was 4.80 ± 1.38 . The analysis also revealed that the post test 2 mean score of pain was 3.30 ± 1.46 and the post test 3 mean score of pain was 2.60 ± 0.92 .

The calculated paired‘t’ value of $t = 11.000$ between pretest and post test 1 was found to be statistically significant at $p<0.001$ level.

The calculated paired‘t’ value of $t = 8.548$ between the post test 1 and post test 2 was found to be statistically significant at $p<0.001$ level.

The calculated paired ‘t’ value of $t = 4.282$ between the post test2 and post test3 was found be to statistically significant at $p<0.001$ level.

This clearly shows that the administration of tender coconut water to reduce pain among children during micturition was found to be effective in reducing pain during post- test 1, post -test 2 and post- test 3.

Section D:Association of post test level of pain during micturition among children with uti with their selected demographic variables.

Table 4: Association of post test(Day 3) level of pain during micturition among children with UTI with their selected demographic variables.

Demographic Variables	Mild Pain (1 – 2)		Moderate Pain (3 – 6)		Chi-Square Value
	No.	%	No.	%	
Age of the child					$\chi^2=0.305$ d.f = 2 p = 0.858
1 - 4 years	24	40.0	11	18.3	
4 - 8 years	11	18.3	5	8.3	
8 - 12 years	7	11.7	2	3.3	
Sex of the child					$\chi^2=0.016$ d.f = 1 p = 0.899
Male child	31	51.7	13	21.7	
Female child	11	18.3	5	8.3	
Place of residence					$\chi^2=0.741$ d.f = 1 p = 0.389
Rural	28	46.7	14	23.3	
Urban	14	23.3	4	6.7	
Education of the child					$\chi^2=0.442$ d.f = 2 p = 0.802
Primary	23	38.3	9	15.0	
Secondary	18	30.0	8	13.3	
Higher secondary	1	1.7	1	1.7	
Education status of the mother					$\chi^2=3.119$ d.f = 2 p = 0.210
Primary	4	6.7	3	5.0	
Secondary	38	63.3	14	23.3	
Higher secondary	0	0	1	1.7	
Graduate	-	-	-	-	
Monthly income					$\chi^2=0.887$ d.f = 2 p = 0.642
<Rs.1802	40	66.7	18	30.0	
Rs.1803 – 5386	1	1.7	0	0	
Rs.5387 – 8988	-	-	-	-	
Rs.8989 – 13494	1	1.7	0	0	
>=Rs.13494	-	-	-	-	
Type of the family					$\chi^2=3.956$ d.f = 2 p = 0.138
Nuclear family	34	56.7	18	30.0	
Joint family	7	11.7	0	0	
Extended family	-	-	-	-	
Single parent	1	1.7	0	0	
Previous hospitalization					$\chi^2=6.779$ d.f = 1 p = 0.009**
Yes	39	65.0	12	20.0	
No	3	5.0	6	10.0	
Religion					$\chi^2=7.013$ d.f = 2 p = 0.030 *
Hindu	32	53.3	12	20.0	
Muslim	4	6.7	6	10.0	
Christian	6	10.0	0	0	
Others	-	-	-	-	
Hygienic practice					$\chi^2=0.016$ d.f = 1 p = 0.899
Self	11	18.3	5	8.3	
By others	31	51.7	13	21.7	
Type of food					-
Vegetarian	-	-	-	-	
Non-vegetarian	-	-	-	-	
Mixed	42	70.0	18	30.0	

p<0.01, *p<0.001, S – Significant, N.S – Not Significant

The table 4 shows that the demographic variables with previous hospitalization and religion had shown statistically significant association with post test(Day 3) level of pain during micturition among children with UTI at $p < 0.01$ and $p < 0.05$ level respectively and the other demographic variables had not shown statistically significant association with post test(Day 3) level of pain during micturition among children with UTI.

CHAPTER-V

SUMMARY OF THE RESULT

The primary aim of the study was to assess the effectiveness of tender coconut water in reducing pain during micturition among children with urinary tract infection admitted in urological ward at, Institute of Child Health and Hospital for Children, Chennai.

The data collection was done. The obtained data was summarized and tabulated by utilizing descriptive statistics (percentage, mean, standard deviation) and inferential statistics (student paired t- test and chi- square test).

5.1 Major Findings of the Study

- Among the children majority 35(58.33%) were in the age group of 1 – 4 years.
- Nearly half of them were male child 44(73.33%).
- Majority of the children 42(70%) were from rural area.
- Nearly 42(53.33%) were studying in primary school.
- More than half of the 52(86.67%) of mothers were educated up to secondary level.
- Among the parents 58(96.67%) had monthly income of <Rs.1802.
- Most of the parents 52(86.67%) belonged to nuclear family.
- Majority of the children 44(73.33%) were Hindus
- Higher of the children 51(.85%) had previous history of hospitalization
- Most the parents 44(73.33%) were practicing hygiene as advised by others
- Almost all 60(100%) were taking mixed type of food

- Findings on level of pre-test level of pain during micturition
- The pre test, majority 39(65%) had moderate pain and 21(35%) had severe pain during micturition. It was calculated using percentage.
- Findings on the post-test level of pain during micturition after administration of tender coconut water
- In the post test,
- In the post test 1, after the administration of tender coconut water, majority 53(88.33%) had moderate pain, 4(6.67%) had severe pain and 3(5%) had mild pain.
- In the post test 2, majority 30(50%) had moderate pain, 29(48.33%) had mild pain and only 1(1.67%) had severe pain.
- In the post test 3, majority 42(70%) had mild pain and 18(30%) had moderate pain during micturition
- Findings on pre and post test pain scores during micturition among children with UTI
- In the pretest, the mean score of pain during micturition was 6.26 ± 1.49 whereas in the post test 1 on day 1 the mean score of pain was 4.80 ± 1.38 .
- The analysis also revealed an **effectiveness of coconut water administration** that the post test 2 mean score of pain was 3.30 ± 1.46 and the post test 3 mean score of pain was 2.60 ± 0.92 .
- The calculated paired 't' value of $t = 11.000$ between pretest and post test 1 was found to be statistically significant at $p < 0.001$ level.
- The **effectiveness of coconut water administration** calculated paired 't' value of $t = 8.548$ between the post test 1 and post test 2 was found to be statistically significant at $p < 0.001$ level.

- The **effectiveness of coconut water administration** calculated was paired 't' value of $t = 4.282$ between the post test 2 and post test 3 was found to be statistically significant at $p < 0.001$ level.
- This clearly shows that the **administration of tender coconut water reduces pain** among children during micturition and is found to be effective in reducing pain during post test 1, post test 2 and post test 3.
- Findings on the association between the post test (Day 3) level of pain during micturition among children with UTI with their selected Demographic variables.
- The demographic variables under previous hospitalization and religion has shown statistically significant association with post test (Day 3) level of pain during micturition among children with UTI at $p < 0.01$ and $p < 0.05$ level respectively and the other demographic variables has not shown statistically significant association with post test (Day 3) level of pain during micturition among children with UTI.

CHAPTER VI

DISCUSSION

This chapter deals with detailed discussion on the findings of study-interpreted from statistical analysis. The findings are discussed in relation to the objectives of the study.

Children's are the gift to the society and family. The current mechanical life adaptation and pollution in the air, water and sand has created a majority of illnesses among children. Since India is a developing country it needs large amount of change to cleanliness in life. The urinary tract infection among the children is now inevitable but it can be controlled by adopting a healthy environment.

The study findings are discussed as per the objectives of the study.

Objective 1: The first objective of the study was to describe about the socio demographic variables of the children.

It reveals that majority 35(58.33%) were in the age group of 1 – 4 years, 44(73.33%) were male child, 42(70%) were from rural area, 32(53.33%) were studying in primary school, 52(86.67%) of mothers were educated up to secondary level, 58(96.67%) had monthly income of <Rs.1802, 52(86.67%) belonged to nuclear family, 51(.85%) had previous history of hospitalization, 44(73.33%) were Hindus, 44(73.33%) were practicing hygiene by others and almost all 60(100%) were taking mixed type of food

Objective 2: To assessed the pain level during micturition before administration of tender coconut water in children with urinary tract infection admitted paediatric medical ward.

It shows that in the pretest, majority 39(65%) had moderate pain and 21(35%) had severe pain during micturition.

These findings were consistent with study done by Priya S.R, Lalitha Ramasamy(2014) this reveals that tender coconut water is a refreshing drink with electrolytes (ionic mineral) similar to human plasma. This refreshing drink is filled with many healthy natural nutrients which can enhance the body's metabolism and immunity and is used more as a health supplement. It has the dilution property (46%) which only reduces the pain during micturition among children with urinary tract infection. The recent discovery of other medicinal values of coconut water signifies a good potential (100%) in improving human health. Coconut water has recently caught on among athletes, health freaks and urbanites in many developed countries. An increasing international demand for this product could be a highly positive issue for thousands of Asian small farmers. The mineral composition and reasonable total sugar (34%) content make coconut water a natural isotonic sports drink.

Objective 3: To evaluate the pain level during micturition after administration of tender coconut water in children with urinary tract infection admitted paediatric medical ward.

In my study it shows that

In the post test 1, after the administration of tender coconut water, majority 53(88.33%) had moderate pain, 4(6.67%) had severe pain and 3(5%) had mild pain.

In the post test 2, majority 30(50%) had moderate pain, 29(48.33%) had mild pain and only 1(1.67%) had severe pain.

In the post test 3, majority 42(70%) had mild pain and 18(30%) had moderate pain during micturition

These findings were consistent with the study done by Agampodi V.A, Jayaverdane B.M. (2011) It shows that 50% of tender coconut water with 0.23% NaOCl has the potential to be used as preservative medium for Anthurium cut flowers.

Objective 4: To determine the effectiveness of administration of tender coconut water on reducing pain among the children with urinary tract infection admitted in pediatric medical ward. Children.

The analysis also revealed that the post test 2 mean score of pain was 3.30 ± 1.46 and the post test 3 mean score of pain was 2.60 ± 0.92 .

The calculated paired 't' value of $t = 11.000$ between pretest and post test 1 was found to be statistically significant at $p < 0.001$ level.

The calculated paired 't' value of $t = 8.548$ between the post test 1 and post test 2 was found to be statistically significant at $p < 0.001$ level.

The calculated paired 't' value of $t = 4.282$ between the post test 2 and post test 3 was found to be statistically significant at $p < 0.001$ level.

This clearly shows that the administration of tender coconut water to reduce pain among children during micturition was found to be effective in reducing pain during post test 1, post test 2 and post test 3.

The above said findings were similar with the study done by Muhammad anas Othaman et al (2014) conducted study on coconut water which showed low Brix value need to be adjusted to 140 Brix by adding sucrose prior to the fermentation process. Substrates fermented with *Saccharomyces cerevisiae* have yielded 7-8% of alcohol within 7-10 days aerobic incubation at room temperature. The alcoholic medium were then used as a seed broth for acetic

fermentation with *Acetobacter aceti* as inoculums and fermented for approximately 2 months to obtain at least 4% of acetic acid. Investigation on the effect of inoculum sizes and implementation of back-slopping technique were performed to improve the processing method for coconut water vinegar production. The results show that 10% of inoculums size was the best for acetic acid fermentation and the back-slopping technique has helped to reduce the process time of coconut water vinegar production.

Objective 5: To find the association between the selected demographic variables with post test scores of reducing pain among the children with urinary tract infection admitted in paediatric medical ward.

In this study the demographic variables under previous hospitalization and religion shows statistically significant association with post test (Day 3) level of pain during micturition among children with UTI at $p < 0.01$ and $p < 0.05$ level respectively and the other demographic variables had not shown statistically significant association with post test (Day 3) level of pain during micturition among children with UTI.

H1 There was statistically significance difference between pretest and posttest reduction of pain in children during micturition after the administered of tender coconut water of $t = 4.282$ at $p < 0.000$ level. So the first hypothesis was proved.

H2 There was significant association between selected demographic variables with the post values of pain in children during micturition after the administered of tender coconut water such as religion, history previous hospitalization $P < 0.01$ and $P < 0.05$. So the second hypothesis was proved.

CHAPTER-VII

CONCLUSION AND RECOMMENDATION

The study was conducted to assess the effectiveness of Tender coconut water in reducing pain during micturition among children with urinary tract infection. Relevant literature, journal were reviewed to enrich the knowledge on the selected study and it facilitates in selection of appropriate conceptual frame work, developing a model and research plan.

7.1 Implications of The Study

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

Implications for nursing education

- Nursing education should prepare the nurses for imparting health information effectively, efficiently to the stake holders.
- Students/ Nurses must be prepared with current innovative methods, current updating materials and it helps to hold the interest on the health of the children in public and to become an effective child health nurse.
- Nurses at the post graduate level need to develop their skill, in preparing health teaching materials.
- The health educational materials especially child health education module prepared for this study can be utilized by the nursing students in clinical practice and home visits.

Implications for nursing practice

- Along with the changing scenario of health care delivery system, the emphasis is shifted from care oriented approach to preventive and protective approach. The study revealed that, there is a need of

information regarding reducing the urinary tract infection among the admitted children in urological ward.

- This study stressed that there is urgent need of education by nursing staff, student nurses and in planning and conducting educational programme periodically and promote in their current knowledge level.

Implications for nursing research

- Since children hospital and research centre is best place which plays a major role in identifying and preventing impact of disability among children with their parents, the research should be focused on massive reduction on occurrence of urinary tract infection among the admitted children in urological ward followed by various teaching programmes.
- Research should be done on practicing newer methods of teaching, focusing on interest, quality and cost effectiveness.

Implications for nursing administration

- The main focus of nursing administration is to organize current scenario and updating seminars and workshop and other educational programme for staff nurses, school health nurses and student nurses as a part of it in-service education programme, since they have direct contact with the parents as well as children while conducting health programme.
- Nursing administrator should take part in the health policy making and developing protocols.

7.2 Limitations:

- Longer effects of the tender coconut water could not be measured
- Some parents hesitated to give tender coconut water because of the bad fads of it.

7.3 Recommendation for further study.

- Keeping in view the findings of the present study, the following recommendations were made since the study was carried out on a small convenience sample. The results can be used only as a guide for further studies.
- The study can be replicate by taking a large sample in other parts of the country.
- A similar study can be conducted among children by assessing the practice and attitude of the parents in the society.
- Education can be given to school teachers on monitoring the students for having urinary tract infection.
- Special attention can be given to the children with minor any urinary tract infection with symptoms
- Awareness can be given to parents about urinary tract infection condition during parents-teachers meeting at hospital.
- Periodical check up camps can be done in schools to identify urinary tract infection among children especially female children.

Conclusion

This chapter enlightens the importance of this research and reveals that there is a significant improvement in consuming of tender coconut water on diluting the urine and reducing pain during micturition and promotes health level of children, and health education was only the effective way to upgrade their health status, by adopting certain natural resources will maintain children's healthy manner.

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INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI-3

EC Reg No.ECR/270/Inst./TN/2013
Telephone No. 044 25305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Mrs. NIRMALA DEVI.M.K
M.Sc., (Nursing)
College of Nursing
Madras Medical College,
Chennai - 600 003.

Dear Mrs. NIRMALA DEVI.M.K,

The Institutional Ethics Committee has considered your request and approved your study titled **A STUDY TO ASSESS THE EFFECTIVENESS OF TENDER COCONUT WATER IN REDUCING PAIN DURING MICTURITION AMONG CHILDREN WITH URINARY TRACT INFECTION ADMITTED IN UROLOGY WARD AT INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN , EGMORE. No.12102014.**

The following members of Ethics Committee were present in the meeting held on 21.10.2014 conducted at Madras Medical College, Chennai-3.

- | | |
|---|----------------------|
| 1. Dr.C.Rajendran, M.D., | : Chairperson |
| 2. Dr.R.Vimala, M.D., Dean, MMC, Ch-3 | : Deputy Chairperson |
| 3. Prof.B.Kalaiselvi, M.D., Vice-Principal, MMC, Ch-3 | : Member Secretary |
| 4. Prof.R.Nandhini, M.D., Inst.of Pharmacology, MMC | : Member |
| 5. Prof.K.Ramadevi, Director i/c, Inst.of Biochemistry, MMC | : Member |
| 6. Prof.Saraswathy, M.D., Director, Pathology, MMC, Ch-3 | : Member |
| 7. Prof.S.G.Sivachidambaram, M.D., Director i/c, Inst.of Internal Medicine, MMC | : Member |
| 8. Dr.Raghumani, M.S., Professor of Surgery, MMC | : Member |
| 9. Thiru S.Rameshkumar, Administrative Officer | : Lay Person |
| 10.Thiru S.Govindasamy, B.A., B.L., | : Lawyer |
| 11.Tmt.Arnold Saulina, M.A., MSW., | : Social Scientist |


We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.


Member Secretary, Ethics Committee

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by **Ms.Nirmala Devi M.K** , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on **“A STUDY TO ASSESS THE EFFECTIVENESS OF TENDER COCONUT WATER IN REDUCING PAIN DURING MICTURITION AMONG CHILDREN WITH URINARY TRACT INFECTION ADMITTED IN UROLOGY WARD AT INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN ,EGMORE, CHENNAI- 8”**, has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.


SIGNATURE WITH SEAL
MEDICAL REGISTRAR
INSTITUTE OF CHILD HEALTH AND
HOSPITAL FOR CHILDREN
EGMORE, CHENNAI - 600 008

Name : DR . S . SRINIVASAN
Designation : MEDICAL REGISTRAR
Date : 16/7/15
Place : CHENNAI - 8

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that a tool prepared by Ms.Nirmala Devi M.K , studying M.Sc.Nursing II year, College of Nursing, Madras Medical College, undertaking a Research study on “A STUDY TO ASSESS THE EFFECTIVENESS OF TENDER COCONUT WATER IN REDUCING PAIN DURING MICTURITION AMONG CHILDREN WITH URINARY TRACT INFECTION ADMITTED IN UROLOGY WARD AT INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN ,EGMORE, CHENNAI- 8”, has been validated by me and is found to be valid upto date and she can proceed with this tool to conduct the main study.

(Malu)
SIGNATURE WITH SEAL

Name : Mrs. Maliba Janice J
Designation : Lecturer
Date : 15.07.15
Place : Chennai - 69



From

Mrs.NIRMALA DEVI M.K,
M.Sc. (N) II year,
College of Nursing,
Madras Medical College,
Chennai - 600003.

To

The Director,
Institute of child health and hospital for children,
Egmore ,
Chennai .08

Through Proper Channel

Respected Sir,

Sub: Requesting for permission to conduct a nursing research study-regarding

I NIRMALA DEVI .M.K.M.sc Nursing II year, College of Nursing, Madras Medical College, request you to kindly grant me permission to conduct nursing research study on the topic "A STUDY TO ASSESS THE EFFECTIVENESS OF TENDER COCONUT WATER IN REDUCE IN PAIN DURING MICTURITION AMONG CHILDREN WITH URINARY TRACT INFECTION ADMITTED IN UROLOGY WARD AT INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN EGMORE ".As partial fulfilment of dissertation study for the degree of Master of Science in Nursing.

I assure you that it will not interfere with the routine activities of the study settings as well as keep confidentiality and anonymity of each children.

Thanking you

Place: CHENNAI - 03 .

Yours obediently

Time: 1- 04 - 15 at 10 Am

M. K. Nirmaladevi

(NIRMALA DEVI.M.K)

*Forwarded
Office
Kishor Manojan*

Red
1/11/12
Director and Superintendent,
Institute of Child Health and
Hospital for Children
Egmore Chennai - 600 008

SECTION A
TOOL FOR DATA COLLECTION

Demographic Variables

Age of the child

- 1. 1 - 4 years
- 2. 4 - 8 years
- 3. 8 - 12 years

Sex

- 1. Male
- 2. Female

Place of residence

- 1. Rural
- 2. Urban

Education of the child

- 1. Primary
- 2. Secondary
- 3. Higher secondary

Education status of the mother

- 1. Primary
- 2. Secondary
- 3. Higher secondary
- 4. Graduate

Monthly income

- 1. <Rs.1802
- 2. Rs.1803 – 5386
- 3. Rs.5387 – 8988
- 4. Rs.8989 – 13494
- 5. >=Rs.13494

Type of the family

--

1. Nuclear family

2. Joint family

3. Extended family

4. Single parent

Previous hospitalization

1. Yes

2. No

Religion

1. Hindu

2. Muslim

3. Christian

4. Others

Hygienic practice

1. Self

2. By others

Type of food

1. Vegetarian

2. Non-vegetarian

3. Mixed

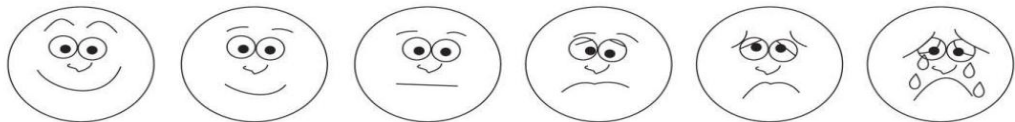
SECTION B

ASSESSMENT OF THE PHYSIOLOGICAL PARAMETERS

INSTRUMENTS : The observation will be recorded by the investigator using reliable instruments.

AIM: To assess the pain level of children with UTI providing tender coconut water thrice a day and evaluating its effectiveness

Faces Pain Scale



0	2	4	6	8	10
Very happy, no hurt	Hurts just a little bit	Hurts a little more	Hurts even more	Hurts a whole lot	Hurts as much as you can imagine (don't have to be crying to feel this much pain)

Score interpretation:

Based on the scores the intensity of the pain is categorized as

- 0 : No pain
- 1-2 : mild pain
- 3-6 : moderate pain
- 7-10 : severe pain

Description	Score
No hurt	0
Hurts little bit	2
Hurts little more	4

Description	Score
Hurts even more	6
Hurts whole lot	8
Hurts worst	10

பகுதி - அ

சமூகம் சார்ந்த சுய விவரக் குறிப்பு

உங்கள் கவனத்திற்கு,

கீழ்க்காணும் கேள்விகள், உங்களைப் பற்றியும், உங்கள் குழந்தையைப் பற்றியும் அறிவுதற்காக கேட்கப்படும் கேள்விகள். சரியான விடையைத் தேர்ந்தெடுத்து எண்ணைக் குறிப்பிடுக. நீங்கள் கொடுக்கும் இந்த விவரங்கள் மிக இரகசியமாக பாதுகாக்கப்படும்

- 1) குழந்தையின் வயது ஆண்டுகளில்
- அ) 1-4 வயது
- ஆ) 4-8 வயது
- இ) 8-12 வயது
- 2) பாலினம்
- அ) ஆண்
- ஆ) பெண்
- 3) வசிக்கும் இடம்
- அ) கிராமம்
- ஆ) நகரம்
- 4) குழந்தையின் கல்விநிலை
- அ) ஆரம்பக் கல்வி
- ஆ) உயர்நிலைப்பள்ளி
- ஆ) மேல்நிலைப்பள்ளி
- 5) தாயின் கல்வி நிலை
- அ) ஆரம்பப் பள்ளி
- ஆ) உயர்நிலைப் பள்ளி
- இ) மேல்நிலைப் பள்ளி
- ஈ) கல்லூரிப் படிப்பு

- 6) மாத வருமானம்
- அ) < ரூ.1802
- ஆ) ரூ.1803-5386
- இ) ரூ.5387-5988
- ஈ) > ரூ.13494
- 7) குடும்ப வகை
- அ) தனிக் குடும்பம்
- ஆ) கூட்டுக் குடும்பம்
- இ) விரிவாக்கப்பட்ட குடும்பம்
- 8) இதற்கு முன் மருத்துவமனையில் அனுமதிக்கப்பட்டுள்ளாரா?
- அ) ஆம்
- ஆ) இல்லை
- இ) ஆம் எனில் என்ன காரணம்
- 9) மதம்
- அ) இந்து
- ஆ) முஸ்லிம்
- இ) கிருஸ்துவர்
- ஈ) மற்றவை
- 10) தன்குத்தத்தை கைக்கொள்ளும் முறைகள்
- அ) தானாக
- ஆ) பிறர் உதவியுடன்
- 11) உணவு பழக்க முறை
- அ) சைவம்
- ஆ) அசைவம்
- இ) இரண்டும்

பகுதி - ஆ

எண் தொகுப்பு

தேதி

நேரம்

காலை/மாலை

வலியை அளக்கக்கூடிய அளவுகோல் ஆய்வாளர் கீழ்க்காணும் வலியை அளக்கும் அளவுகோலின் மூலம் இளநீர் அருந்துவதற்கு முன் மற்றும் பின் மூன்று நாட்கள் முதல் நாளன்று காலையும், மாலையும் தகவல் சேமிக்கிறார்.

Wong-Baker FACES™ Pain Rating Scale



பொருள்	மதிப்பெண்
வலி இல்லை	0
லேசான வலி	2
மிதமான வலி	4
அதிகமான வலி	6
கடுமையான வலி	8
மிகக் கடுமையான வலி	10

0 - வலி இல்லை

1-2 - லேசான வலி

3 -6 - மிதமான வலி

7- 10 - கடுமையான வலி

PATIENT CONSENT FORM

Title of the study : “A study to assess the effectiveness of tender coconut water in reducing pain during Micturition among children with Urinary tract infection admitted in Urology Ward at Institute of Child Health and Hospital for Children, Egmore, Chennai -8”.

Name of the children’s parent / care taker :

Date :

Age / sex:

Name of the principal investigator: Nirmaladevi. M.K

Name of the Institution: Institution of Child Health, Egmore, Chennai – 8.

Enrollment No:

Documentation of the informed consent: (legal representative can sign if the participant is minor or incompetent).

- I have read /it has been read for me, the information in this form. I was free to ask any questions and they have been answered. I am over 18 years of age and exercising my free power of choice, hereby give my consent to be included as a participant in the study.
- I have read and understood this consent form and the information provided to me.
- I have had the consent document explained in detail to me.

- I have been explained about the nature of my study.
- My rights and responsibilities have been explained to me by the investigator.
- Whether the participant's consent was asked : Yes / No
- [If the answer to the above question is yes, write the following phrase:
- You agree with the manner to participate in the study].
- [If answer to the above question No, give reason(s):
- Name and ignature of / thumb impression of the Participant/Parent/Guardian

- Name _____

Signature _____

Date _____

- Name and Signature of the investigator or his representative obtaining consent :

- Name _____

Signature _____ Date _____

INFORMATION TO PARTICIPANTS

Title : “A study to assess the effectiveness of tender coconut water in reducing pain during Micturition among children with Urinary tract infection admitted in Urology Ward at Institute of Child Health and Hospital for Children, Chennai”.

Investigator : Nirmaladevi. M.K

Name of Participant :

Age/Sex :

You are invited to take part in this research/ study /procedures. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

You are being asked to participate in this study being conducted in Institute of child health and hospital for children,

What is the Purpose of the Research (explain briefly)

This research is conducted to **“A study to assess the effectiveness of tender coconut water in reducing pain during Micturition among children with Urinary tract infection admitted in Urology Ward at Institute of Child Health and Hospital for Children, Egmore, Chennai - 8”.**

We have obtained permission from the Institutional Ethical Committee.

THE STUDY DESIGN

pre-experiment – pre test – post test control design.

STUDY PROCEDURE:

1. The study will be undertaken after approval from institutional ethics committee.
2. Permission from the Director of ICH will be obtained.
3. Those who are willing to participate will be enrolled and informed consent will be obtained.
4. The client who fulfils inclusion and exclusion criteria will be enrolled for the study.
5. The level of the pain of the child during micturition with the facial expression scale
6. The children admitted in urological medical wards with UTI and having pain during micturition will receive 200ml of Tender coconut water 3 times a day for 3 days.
7. The pain level will be evaluated by facial expressionscale
8. They will be ask to continue treatment of UTI.
9. Result of the study will be analysed by using descriptive and inferential statistics.

Possible Risks to you -Briefly Mention

No risks involve

Possible benefits to other people

The result of the research may provide benefits to the society in terms of advancement of medical knowledge and/or therapeutic

benefits to future patients. [The sponsor of the research_____ (write name of the pharmaceutical company or other sponsor) will also benefit from the results of study, if positive].

Confidentiality of the information obtained from you

You have the right to confidentiality regarding the privacy of your medical information (personal details, results of physical examinations, investigations and your medical history). The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

Your privacy in the research will be maintained throughout the study in the event of any publication or presentation resulting from research, no personally identifiable information will be shared.

How will your decision to not participate in the study affect you?

Your decisions to not participate in this research study will not affect your activity of daily living, medical care or your relationship with investigator or the institution. Your doctor will still take care of you and you will not lose any benefits to which you are entitled.

Can you decide to stop participating in the study once you start?

The participation in this research is purely voluntary and you have the right to withdraw from this study at any time during course of the study without giving any reasons.

However, it is advisable that you talk to the research team prior to stopping the treatment.

Signature of the investigator

Signature of the parent / guardian

Date :

Date ;

ஆராய்ச்சி தகவல் தாள்

ஆராய்ச்சி தலைப்பு

இளநீர் குடிப்பதன் மூலம் குழந்தைகளுக்கு (1-12 வயது வரை) சிறுநீர் நிலப்பகுதி தொற்றுவினால் சிறுநீர் கழிக்கும்போது ஏற்படும் வலியினை குறைக்க செய்யும் ஆய்வு முறை.

ஆய்வாளர் : M.K.நிர்மலா தேவி

பங்கேற்பாளர் :

இந்த ஆய்வு அரசு குழந்தைகள் நலம் மற்றும் குழந்தைகள் மருத்துவமனையில் நடைபெற உள்ளது. நீங்கள் உங்கள் குழந்தையை இந்த ஆய்வில் பங்கேற்க நாங்கள் விரும்புகிறோம். இதிலுள்ள தகவலின் அடிப்படையில் இந்த ஆய்வில் பங்கேற்பதா அல்லது வேண்டாமா என்று நீங்கள் முடிவு செய்து கொள்ளலாம். உங்களது சந்தேகங்களை எங்களிடம் கேட்டு நிவர்த்தி செய்து கொள்ளலாம்.

இந்த ஆய்வின் நோக்கம்

குழந்தைகள் சிறுநீர் சம்பந்தப்பட்ட பிரச்சனைக்கு ஆளாகின்றனர். இவற்றை தடுக்க இளநீர் அருந்துவதன் மூலம் சிறுநீர் தொற்றுவினால் ஏற்படும் வலியினை குறைக்கலாம். மேலும் சிறுநீரக செயல்திறனை அதிகரிக்கலாம் என்பதை கண்டறியும் ஆய்வு.

இந்த ஆய்விற்கு இன்ஸ்டிடியூசனல் எத்திக்கல் கமிட்டி சம்மதம் பெற்றிருக்கிறோம்.

ஆய்வின் செயல்முறை

இந்த ஆய்வில் கலந்துகொள்பவர்கள் ஒரே குழுக்களாக உள்ளனர்.

குழுவில் உள்ளவர்கள் வழக்கமான சிகிச்சையுடன் இளநீர் அருந்துவர்.

இந்த ஆய்வில் சிறுநீரக தன்மையை அறிந்துகொண்ட பிறகு முதல் 3 நாட்களுக்கு இளநீர் அளிக்கப்பட்டு சிறுநீரக தன்மை கண்டறியப்படுகிறது.

இந்த சோதனை இளநீர் பருகுவதற்கு முன்பும், இளநீர் பருகிய பின்பும் இரு சோதனைகளும் ஒப்பிடுதல் மூலம் சிறுநீர் கழிக்கும்போது ஏற்படும் வலியின் தன்மையை குறைத்து சிறுநீரக பிரச்சனை தடுக்கப்படுகிறது என்பது கண்டறியப்படுகிறது.

ஆய்வினால் ஏற்படும் நன்மைகள்

இந்த ஆய்வில் கலந்த கொள்வதன் மூலம் குழந்தையின் சிறுநீரக தன்மை மேம்படுத்தப்பட்டு சிறுநீர் சம்பந்தப்பட்ட பிரச்சனை வராமல் தடுக்கப்பட்டு மருத்துவமனையில் தங்கி சிகிச்சை பெரும் நாட்களும் குறைக்கப்படுகிறது. மேலும் இதுபோன்ற பிரச்சனைகள் தடுக்க இந்த ஆய்வு உதவியாக அமையும்.

மருத்துவ சிகிச்சையின் தகவல்கள் குறித்த விவரம்

உங்கள் மருத்துவ சிகிச்சை குறித்த தகவல்கள் ரகசியமாக பாதுகாக்கப்படும் (பெயர், மருத்துவ பரிசோதனை முடிவு, மருத்துவ ஆய்வு முடிவு) இந்த தகவல் தாளில் கையெழுத்திடுவதின் மூலம் உங்களை பற்றிய குறிப்புகளோ, எடுத்துக் கொண்ட சிகிச்சை முறையை பற்றியோ ஆய்வாளரோ இன்ஸ்டிடியூசன் எத்திக்கல் கமிட்டியை சார்ந்தவர்களோ தேவைப்பட்டால் அறிந்து கொள்ளலாம் என்று சம்மதிக்கிறீர்கள். முடிவுகளை அல்லது கருத்துக்களை வெளியிடும் போதோ அல்லது ஆய்வின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆய்வில் பங்கேற்காவிட்டாலும் நீங்கள் வழக்கமான சிகிச்சையை தொடர்ந்து பெறலாம்.

இந்த ஆய்வில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆய்விலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த சிறப்பு சிகிச்சையின் முடிவுகளை ஆய்வின்போதோ அல்லது ஆய்வின் முடிவின்போதோ தங்களுக்கு அறிவிப்போம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆய்வாளர் கையொப்பம்

பங்கேற்பாளர்/பாதுகாவலர் கையொப்பம்

தேதி :

சுய ஒப்புதல் படிவம்

ஆய்வு தலைப்பு:

இளநீர் குடிப்பதன் மூலம் குழந்தைகளுக்கு (1-12 வயது வரை) சிறுநீர் நிலப்பகுதி தொற்றுவினால் சிறுநீர் கழிக்கும்போது ஏற்படும் வலியினை குறைக்க செய்யும் ஆய்வு முறை.

பெயர்:

வயது:

தேதி:

வெளிநோயாளி எண்:

..... என்பவராகிய நான் இந்த ஆய்வின் விவரங்களும் அதன் நோக்கங்களும் முழுமையாக அறிந்து கொண்டேன். எனது சந்தேகங்கள் அனைத்திற்கும் தகுந்த விளக்கம் அளிக்கப்பட்டது. இந்த ஆய்வில் முழு சுதந்திரத்துடன் மற்றும் சுயநினைவுடன் பங்கு கொள்ள சம்மதிக்கிறேன்.

எனக்கு விளக்கப்பட்ட விஷயங்களை நான் புரிந்து கொண்டு நான் எனது சம்மதத்தை தெரிவிக்கிறேன். இச்சுய ஒப்புதல் படிவத்தை பற்றி எனக்கு விளக்கப்பட்டது.

இந்த ஆய்வினை பற்றிய அனைத்து தகவல்களும் எனக்கு தெரிவிக்கப்பட்டது. இந்த ஆய்வில் எனது உரிமை மற்றும் பங்கினை பற்றி அறிந்து கொண்டேன்.

இந்த ஆய்வில் பிறரின் நிர்பந்தமின்றி என் சொந்த விருப்பத்தின் பேரில் தான் பங்கு பெறுகிறேன் மற்றும் நான் இந்த ஆராய்ச்சியிலிருந்து என்னேரமும் பின்வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும் நான் புரிந்து கொண்டேன்.

இந்த ஆய்வில் கலந்து கொள்வதன் மூலம் என்னிடம் பெறப்படும் தகவலை ஆய்வாளர் இன்ஸ்டிடியூசனல் எத்திக்ஸ் கமிட்டியினரிடமோ, அரசு நிறுவனத்தினரிடமோ தேவைப்பட்டால் பகிர்ந்து கொள்ளலாம் என சம்மதிக்கிறேன்.

இந்த ஆய்வின் முடிவுகளை வெளியிடும்போது எனது பெயரோ, அடையாளமோ வெளியிடப்படாது என அறிந்து கொண்டேன். இந்த ஆய்வின் விவரங்களைக் கொண்ட தகவல்தாளைப் பெற்றுக் கொண்டேன். இந்த ஆய்விற்காக இரத்தப் பரிசோதனை செய்து கொள்ள சம்மதிக்கிறேன்.

இந்த ஆய்வில் பங்கேற்கும் பொழுது ஏதேனும் சந்தேகம் ஏற்பட்டால், உடனே ஆய்வாளரை தொடர்பு கொள்ள வேண்டும் என அறிந்து கொண்டேன்.

இச்சுய ஒப்புதல் படிவத்தில் கையெழுத்திடுவதன் மூலம் இதிலுள்ள அனைத்து விஷயங்களும் எனக்கு தெளிவாக விளக்கப்பட்டது என்று தெரிவிக்கிறேன் என்று புரிந்து கொண்டேன். இச்சுய ஒப்புதல் படிவத்தின் ஒரு நகல் எனக்கு கொடுக்கப்படும் என்று தெரிந்து கொண்டேன்.

பங்கேற்பாளர்/பாதுகாவலர் கையொப்பம்

தேதி :

ஆய்வாளர் கையொப்பம்

தேதி :

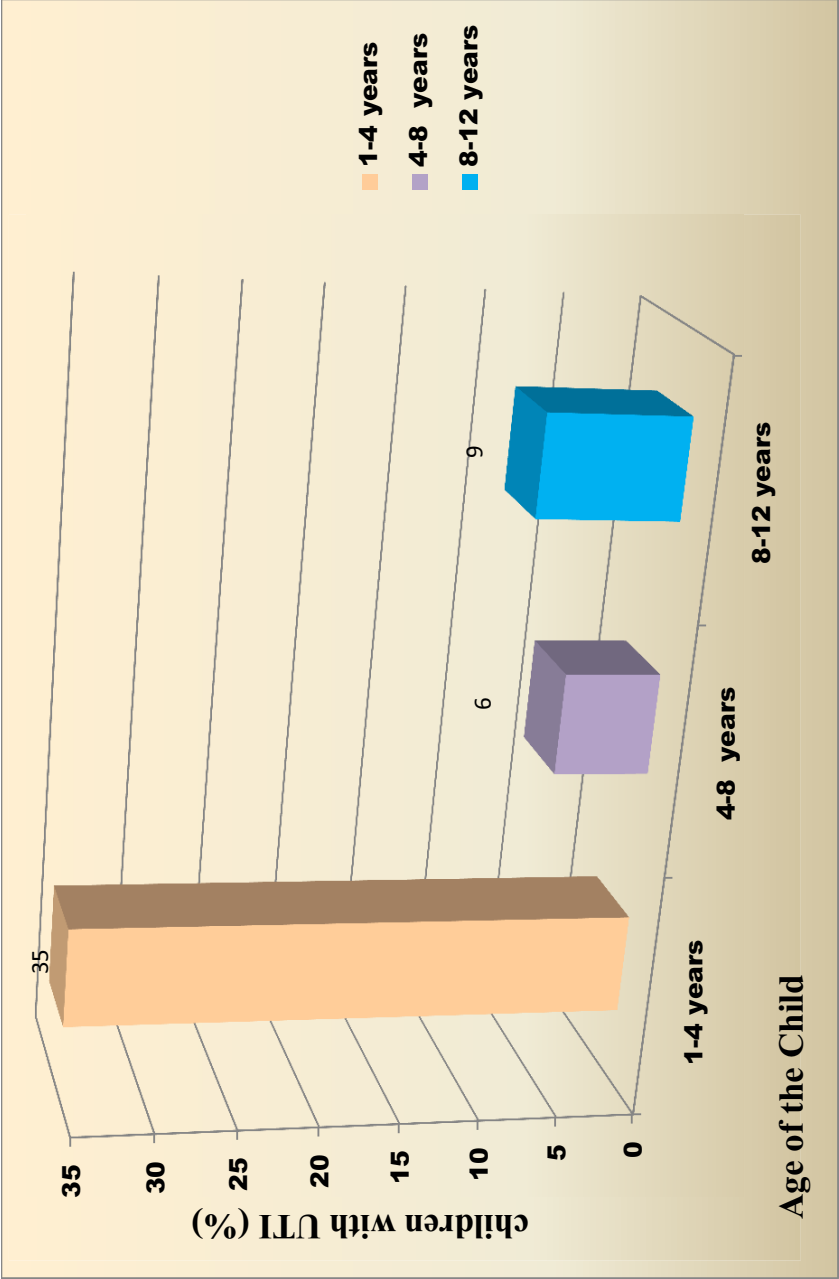


Figure 4.1: Age wise distribution of UTI children.

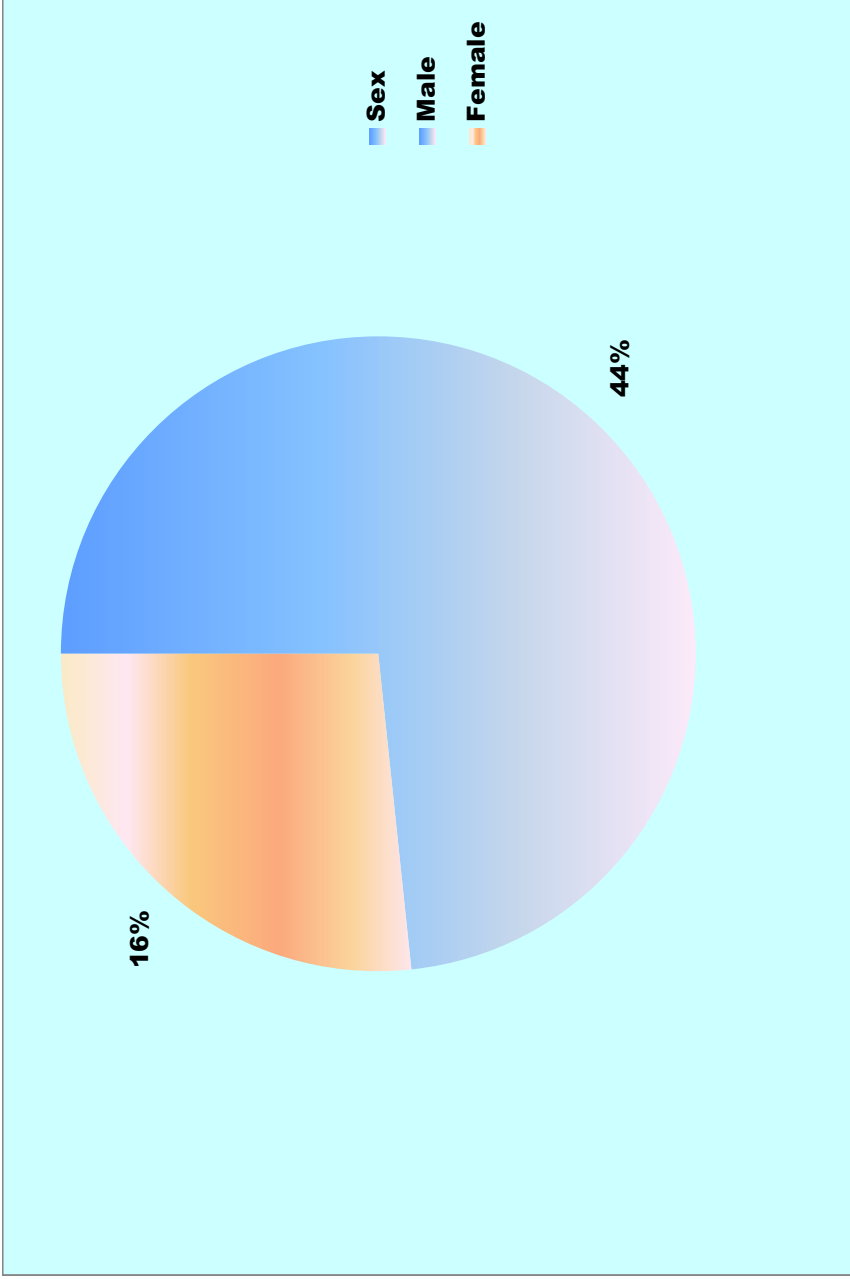


Figure 4.2 : Gender wise distribution of children

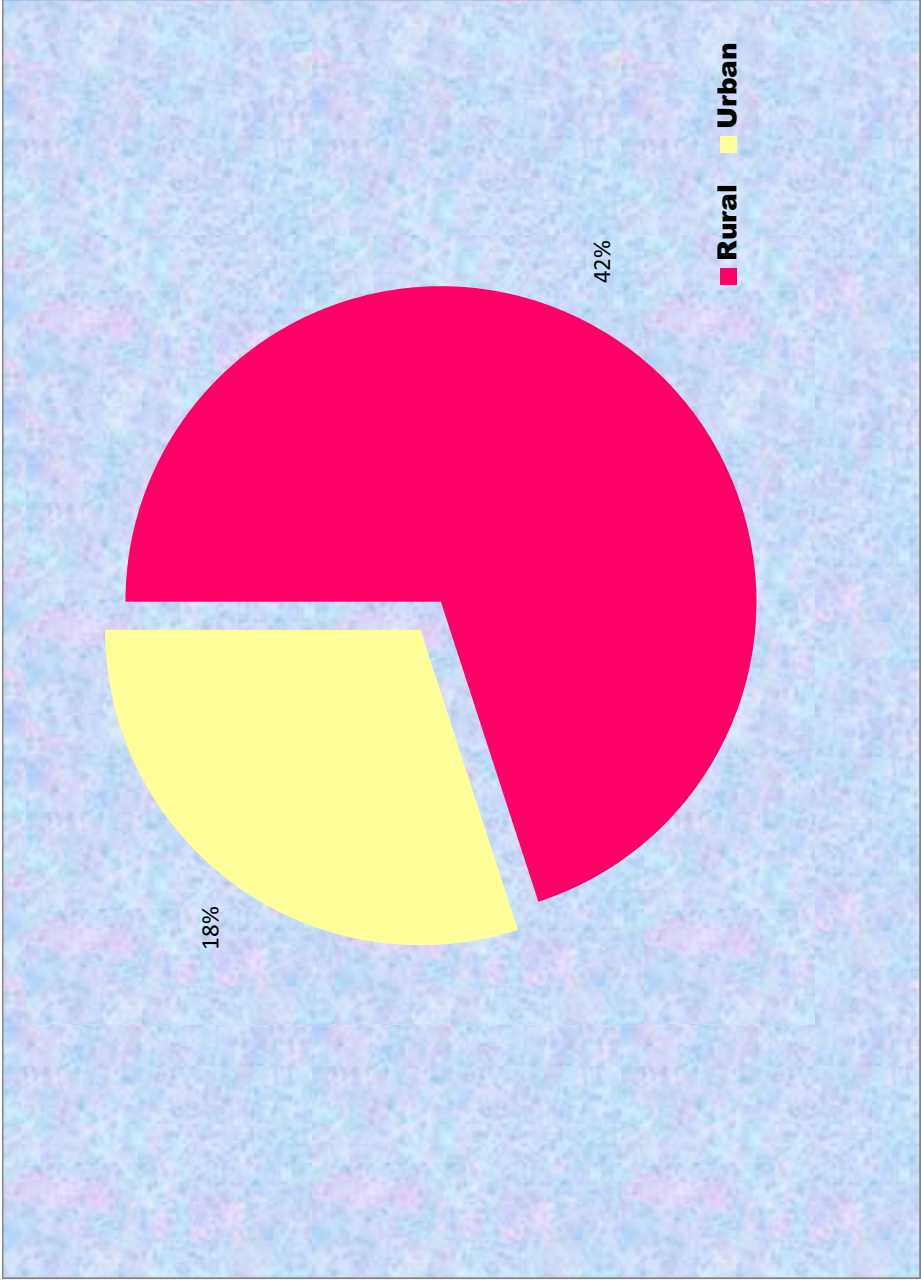


Fig 4.3 Residential distribution of UTI children

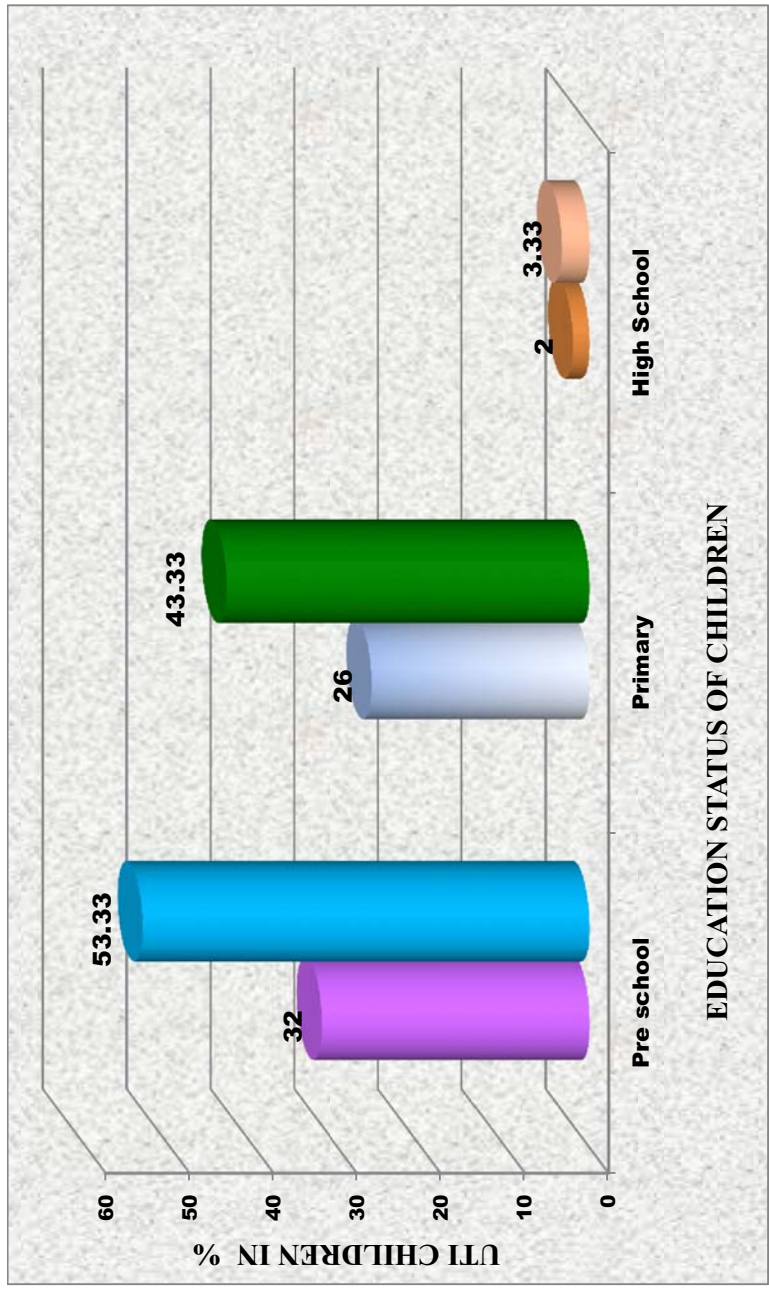


Figure -4.4 Education status wise distribution of children .

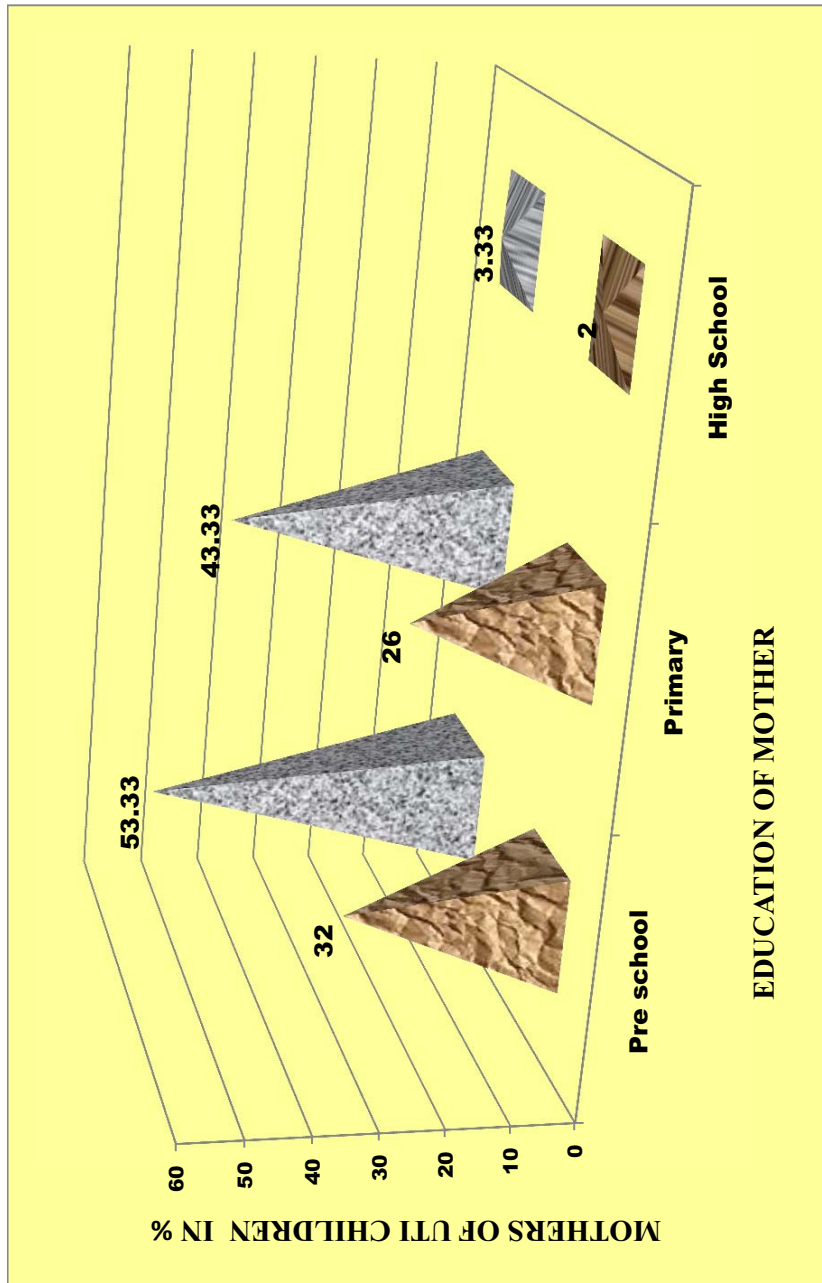


Figure -4.5 The education status wise distribution of mother of the child with UTI.

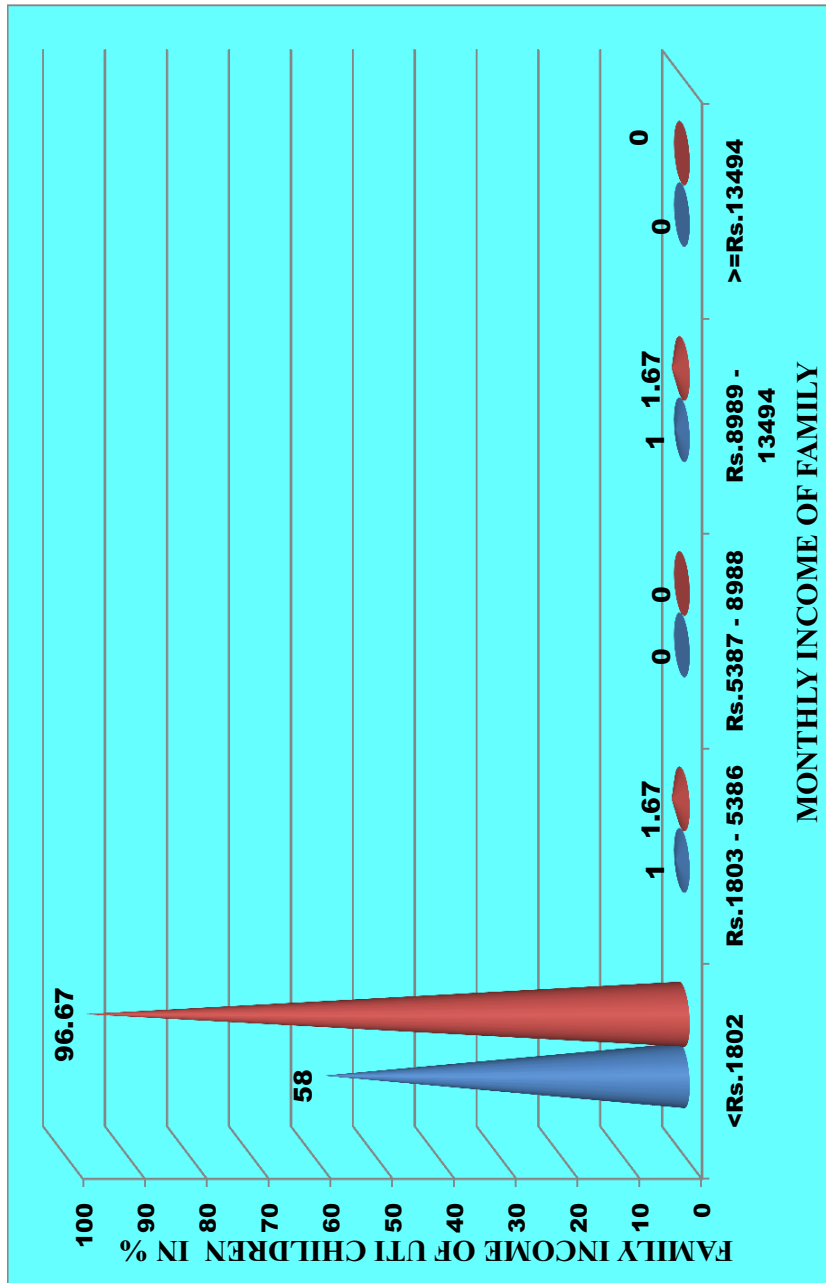


Figure -4.6 Family monthly income wise distribution of the child.

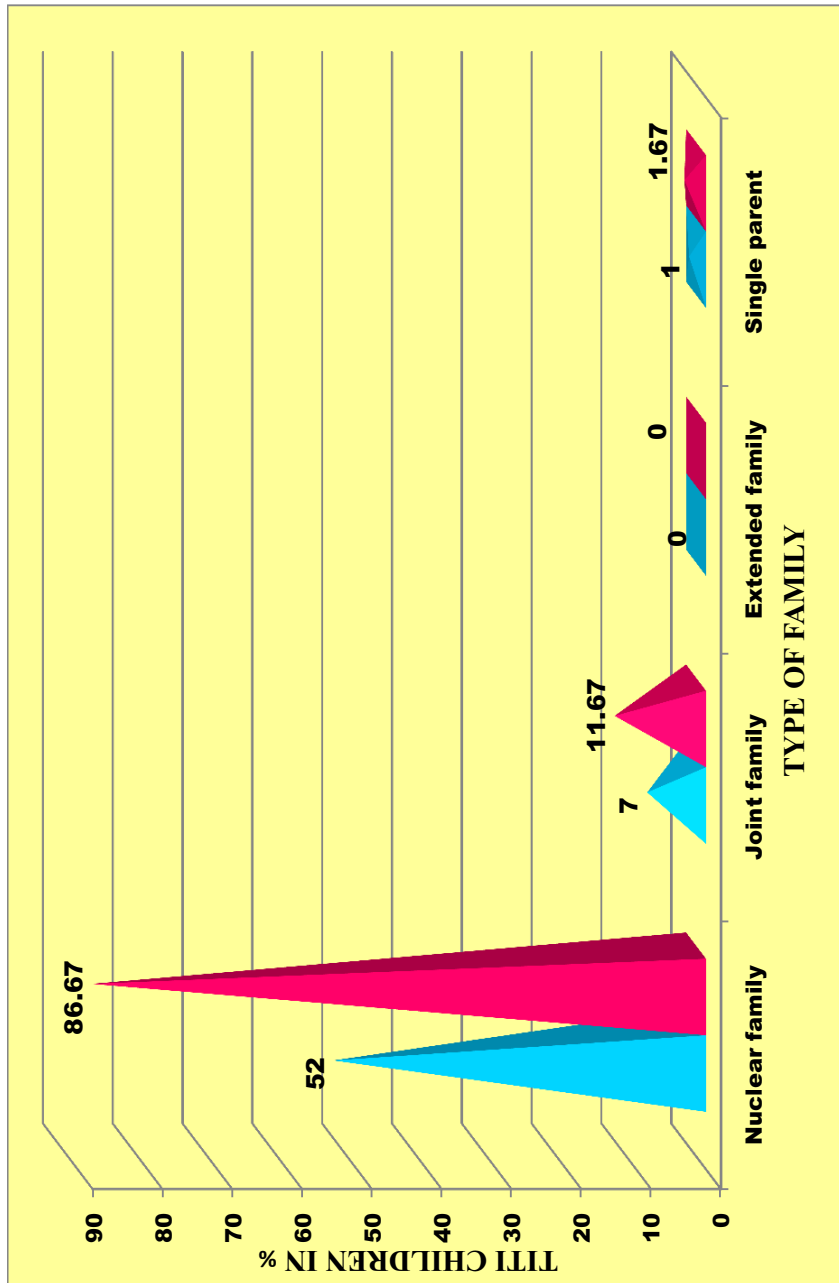


Figure -4.7 Type of family wise distribution of the child.

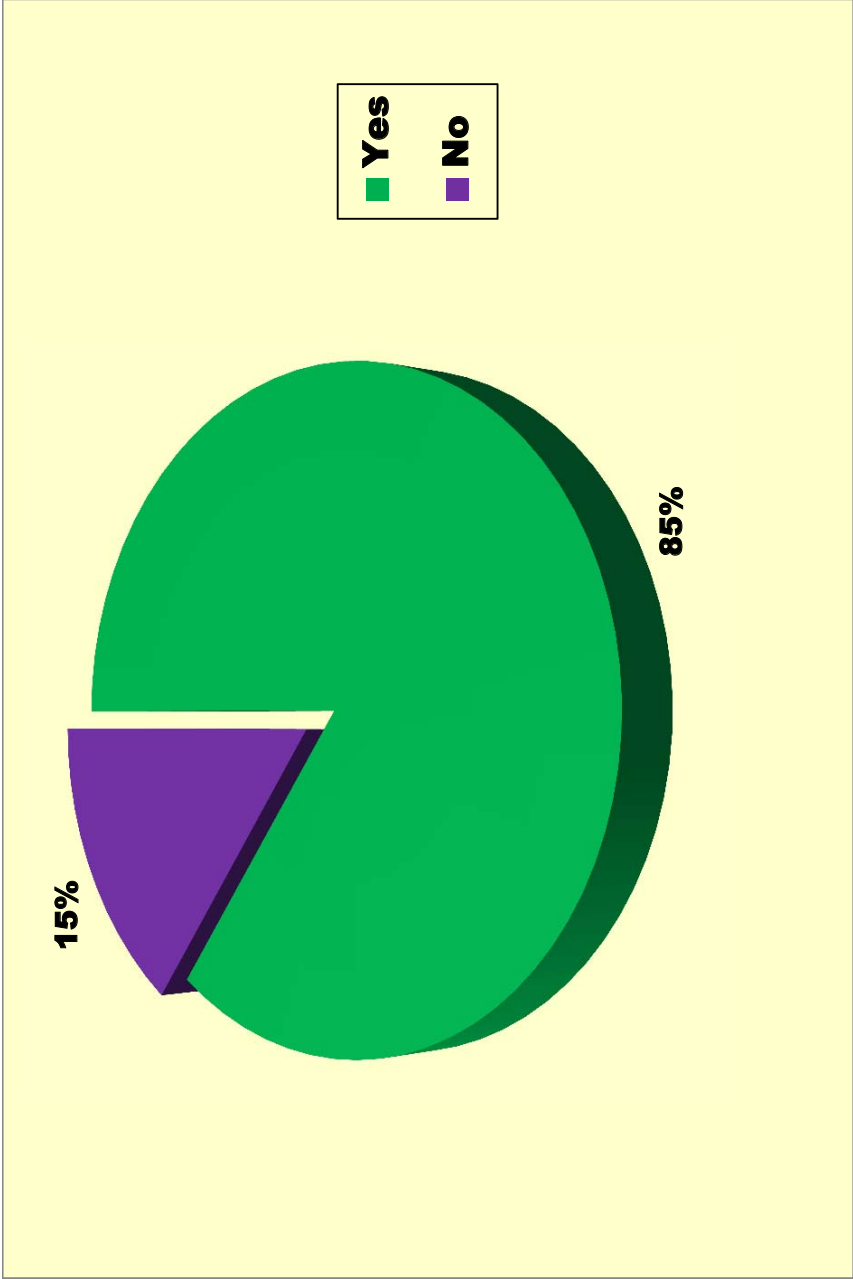


Figure 4.8- History of previous hospitalization of child

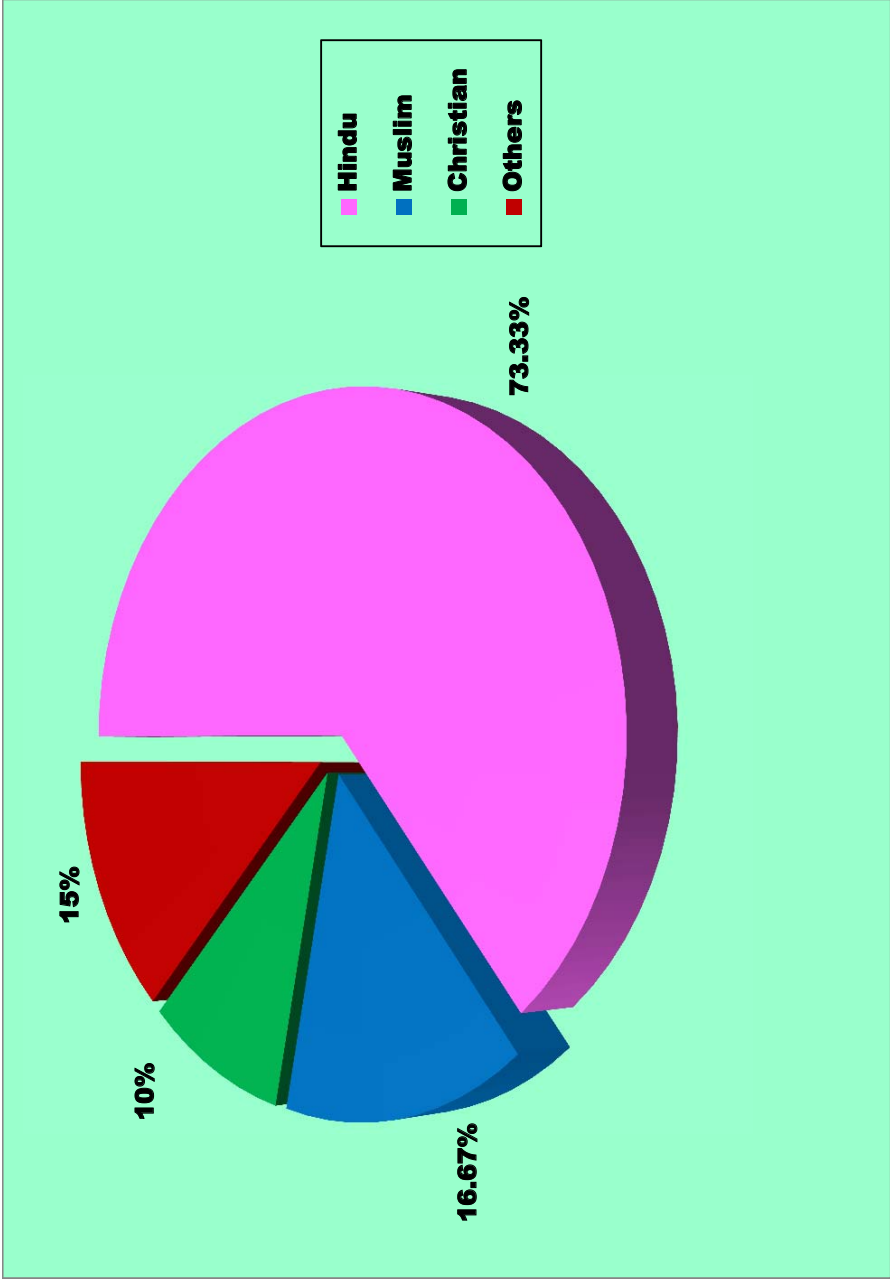


Figure 4.9- Religion wise distribution of the child .

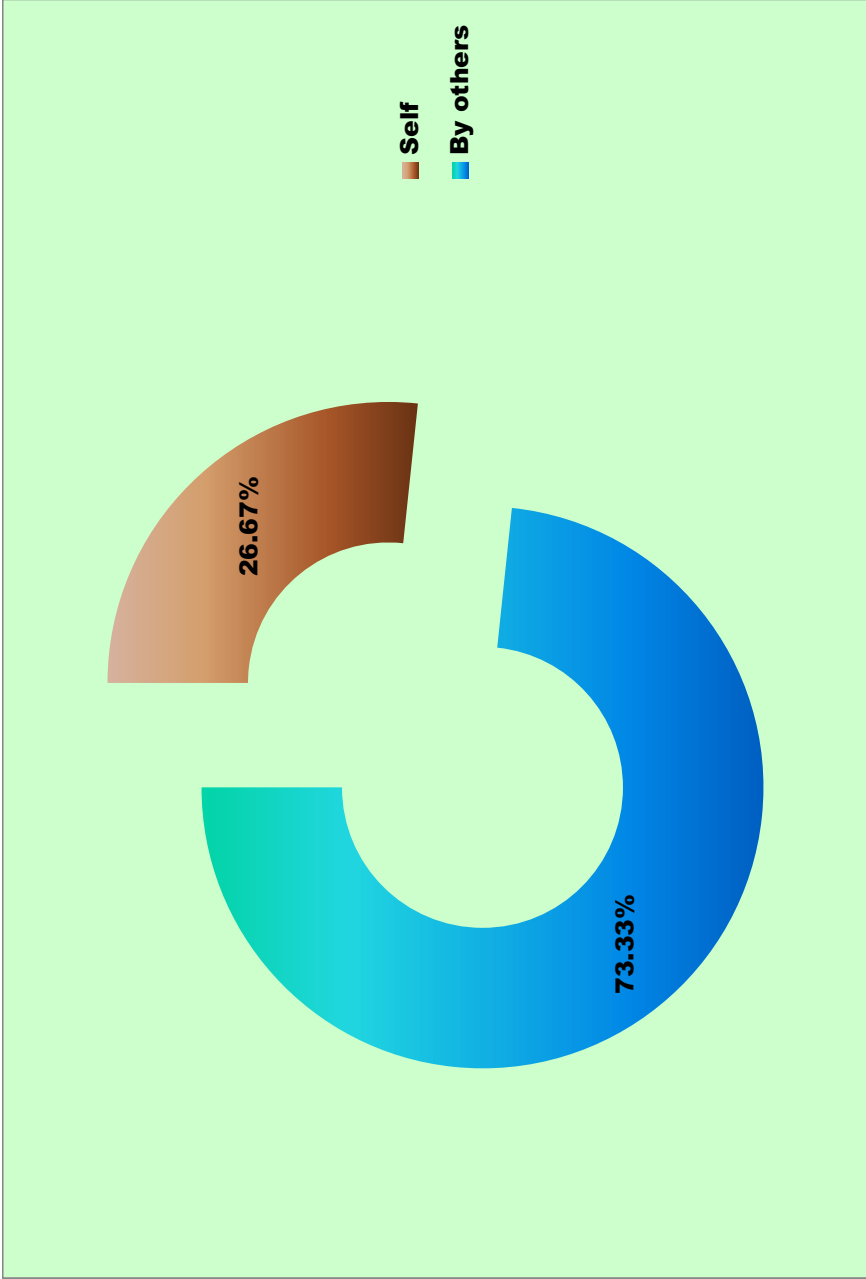


Figure -4.10 Hygienic practice wise distribution of the child.

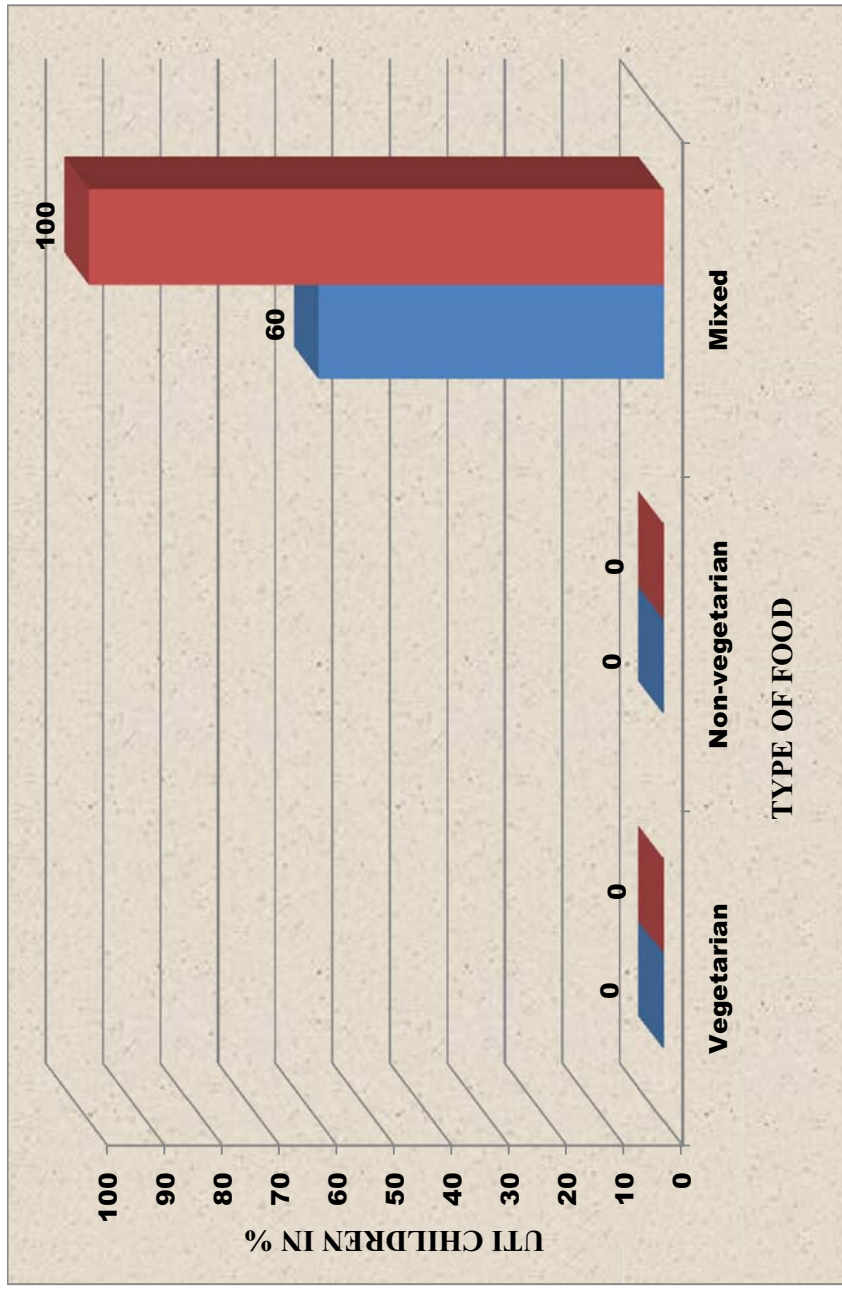


Figure -4.11 Type of food wise distribution of the child.

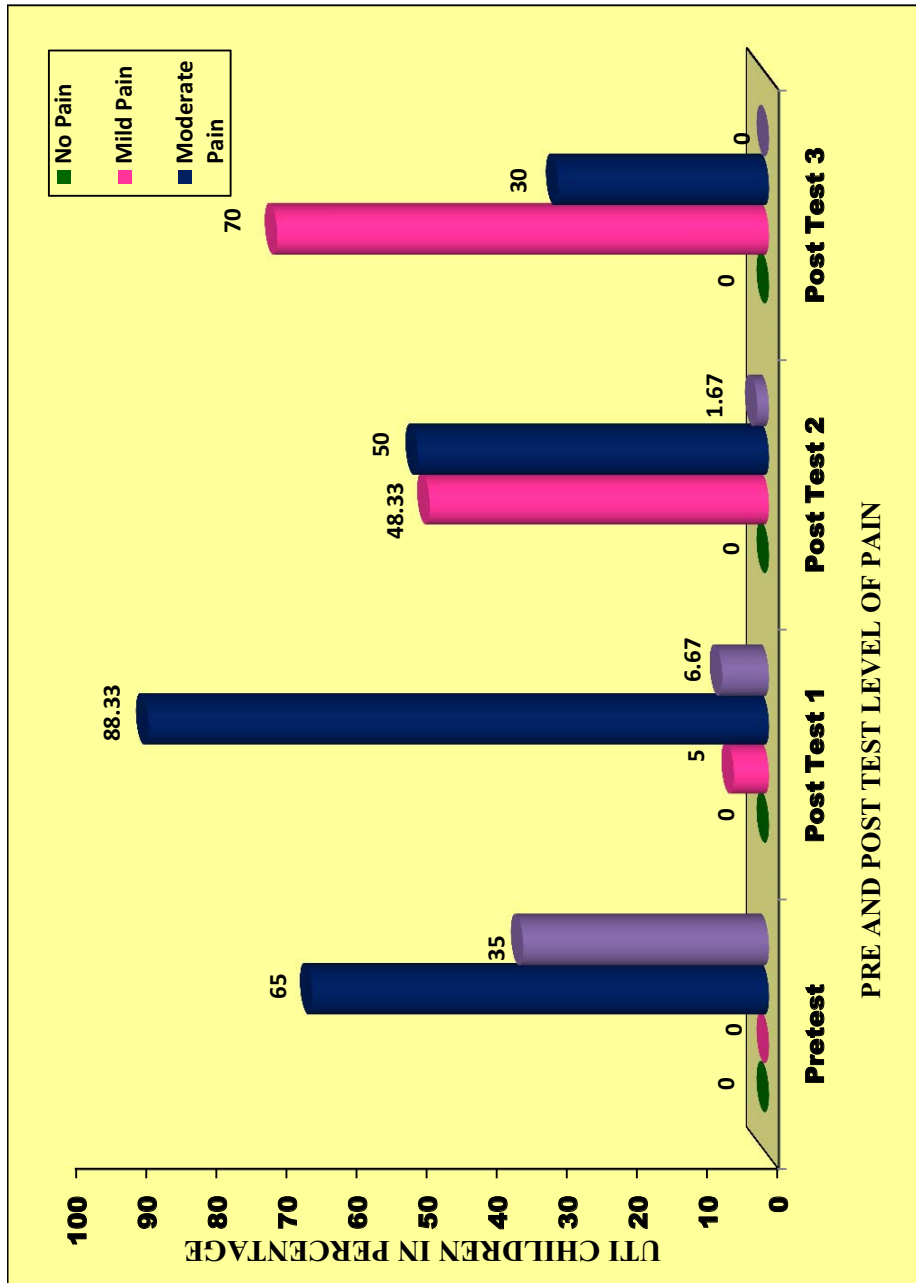


Figure 4.12-Percentage distribution of pretest and post test level of pain during micturition among children with UTI

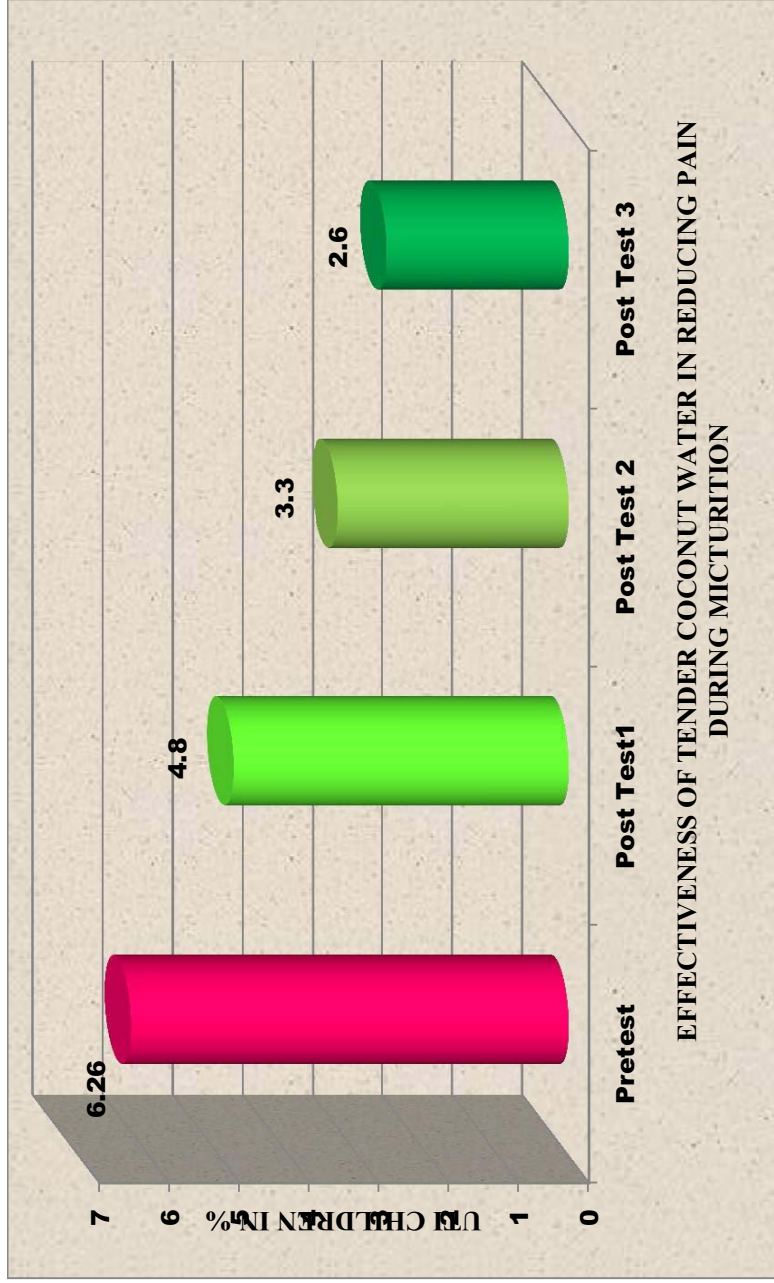


FIG NO 4.13 Comparison of pretest and post test pain scores during micturition among children with UTI

SAMPLE	AGE	SEX	PLACE	EDUCATION STATUS OF CHILD	EDUCATION STATUS OF CHILD	INCOME	FAMILY TYPE	PREVIOUS HOSPITALIZATION	RELIGION	HYGIENIC PRACTICE	TYPE OF FOOD
1	1	1	1	1	2	1	1	1	1	2	3
2	2	1	1	2	2	1	1	1	1	2	3
3	1	1	2	1	2	4	1	2	1	2	3
4	2	1	1	2	2	1	1	1	1	2	3
5	3	1	1	2	2	1	1	1	1	1	3
6	1	1	1	1	1	1	2	1	1	1	3
7	2	1	2	2	2	1	4	1	1	1	3
8	1	1	1	2	2	1	1	2	1	2	3
9	1	1	2	1	2	1	1	2	1	1	3
10	3	1	1	2	1	1	1	2	1	1	3
11	1	2	1	1	1	1	1	1	1	2	3
12	1	1	1	1	1	1	1	2	1	1	3
13	3	1	1	1	2	1	1	1	1	1	3
14	2	1	1	2	2	1	1	1	1	1	3
15	2	2	2	1	2	1	2	2	1	1	3
16	3	1	2	2	2	1	2	1	1	2	3
17	2	1	1	1	2	2	1	1	1	2	3
18	1	1	2	3	2	1	2	1	1	2	3
19	1	2	2	1	2	1	1	1	1	1	3
20	2	1	1	2	1	1	1	1	1	1	3
21	1	1	2	1	2	1	1	1	2	2	3
22	1	1	1	1	1	1	1	1	2	2	3
23	3	1	1	2	2	1	1	1	1	2	3
24	2	2	1	2	2	1	2	1	1	2	3
25	1	1	2	1	1	1	1	1	1	2	3

55	2	1	1	1	1	2	1	1	1	1	2	1	2	2	3
56	1	2	1	1	1	2	1	1	1	1	2	1	1	1	3
57	2	2	2	1	1	2	1	1	1	1	2	2	2	2	3
58	1	1	1	1	1	2	1	1	1	1	2	2	2	2	3
59	3	1	1	2	1	2	1	1	1	1	2	3	3	2	3
60	1	1	1	1	1	2	1	1	1	1	2	3	3	2	3

DEMOGRAHICAL VARIABLES


SAMPLE	AGE	SEX	PLACE	EDUCATIO	EDUCATIO	INCOME	FAMILY TY	PREVIOUS	RELIGION	HYGIENIC #	TYPE OF FOOD
1	1	1	1	1	2	1	1	1	1	2	3
2	2	1	1	2	2	1	1	1	1	2	3
3	1	1	2	1	2	4	1	2	1	2	3
4	2	1	1	2	2	1	1	1	1	2	3
5	3	1	1	2	2	1	1	1	1	1	3
6	1	1	1	1	1	1	2	1	1	1	3
7	2	1	2	2	2	1	4	1	1	1	3
8	1	1	1	2	2	1	1	2	1	2	3
9	1	1	2	1	2	1	1	2	1	1	3
10	3	1	1	2	1	1	1	2	1	1	3
11	1	2	1	1	1	1	1	1	1	2	3
12	1	1	1	1	1	1	1	2	1	1	3
13	3	1	1	1	2	1	1	1	1	1	3
14	2	1	1	2	2	1	1	1	1	1	3
15	2	2	2	1	2	1	2	2	1	1	3
16	3	1	2	2	2	1	2	1	1	2	3
17	2	1	1	1	2	2	1	1	1	2	3
18	1	1	2	3	2	1	2	1	1	2	3
19	1	2	2	1	2	1	1	1	1	1	3
20	2	1	1	2	1	1	1	1	1	1	3
21	1	1	2	1	2	1	1	1	2	2	3
22	1	1	1	1	1	1	1	1	2	2	3
23	3	1	1	2	2	1	1	1	1	2	3
24	2	2	1	2	2	1	2	1	1	2	3
25	1	1	2	1	1	1	1	1	1	2	3
26	1	1	1	1	2	1	1	1	1	2	3
27	3	1	1	2	2	1	1	1	1	2	3
28	3	2	1	2	2	1	1	1	1	2	3
29	1	1	1	1	2	1	1	1	1	2	3
30	1	1	1	1	2	1	1	1	1	2	3
31	1	1	2	2	2	1	1	1	3	1	3
32	3	1	2	2	2	1	2	1	3	2	3
33	1	1	1	1	2	1	1	1	3	2	3
34	1	2	1	1	2	1	1	1	3	2	3
35	2	2	1	1	2	1	1	1	1	2	3
36	1	1	1	1	2	1	1	1	1	2	3
37	2	2	1	1	2	1	1	1	1	2	3
38	2	1	1	1	3	1	1	1	1	2	3
39	1	1	2	3	2	1	1	1	1	2	3
40	1	1	2	2	2	1	1	2	2	2	3
41	2	2	2	2	2	1	1	1	1	2	3
42	1	1	1	2	2	1	1	2	2	2	3
43	1	2	1	2	2	1	1	1	1	1	3
44	1	1	2	2	2	1	1	1	1	1	3
45	1	2	1	2	2	1	2	1	1	1	3
46	1	1	1	1	2	1	1	1	1	2	3
47	1	1	1	1	2	1	1	1	1	2	3
48	1	2	1	1	2	1	1	1	1	2	3
49	1	1	1	1	2	1	1	1	1	2	3
50	2	2	2	2	2	1	1	1	1	2	3
51	1	2	1	2	2	1	1	2	2	2	3
52	2	1	2	1	2	1	1	1	1	2	3
53	1	1	1	2	2	1	1	1	2	2	3
54	1	1	1	2	2	1	1	1	2	2	3
55	2	1	1	1	2	1	1	1	2	2	3
56	1	2	1	1	2	1	1	1	1	1	3
57	2	2	2	1	2	1	1	1	2	2	3
58	1	1	1	1	2	1	1	1	2	2	3
59	3	1	1	2	2	1	1	1	3	2	3
60	1	1	1	1	2	1	1	1	3	2	3

SAMPLE	DAY1	DAY1	DAY2	DAY3
	PAIN SCORE			
	PRE TEST	POST TEST	POST TEST	POST TEST
1	4	4	4	2
2	6	4	4	4
3	6	4	4	2
4	8	6	6	2
5	6	6	6	4
6	6	6	4	2
7	4	4	2	2
8	6	4	4	4
9	8	6	6	4
10	4	4	4	4
11	8	8	8	4
12	6	4	4	4
13	4	4	2	2
14	8	6	2	2
15	6	4	4	2
16	4	4	4	2
17	4	4	2	2
18	6	4	2	2
19	6	6	4	2
20	4	4	2	2
21	8	6	4	2
22	8	6	2	2
23	6	4	2	2
24	6	4	2	2
25	6	4	2	2
26	6	4	2	2
27	6	6	4	2
28	6	4	2	2
29	6	4	2	2
30	6	4	2	2
31	8	6	2	2
32	8	6	2	2
33	8	6	4	2

34	8	6	4	2
35	8	6	4	2
36	8	8	4	4
37	8	8	4	4
38	8	8	4	4
39	4	4	2	4
40	4	4	2	4
41	4	4	2	2
42	4	2	2	2
43	6	4	2	2
44	6	4	2	2
45	6	4	2	2
46	6	4	4	2
47	6	4	4	2
48	6	4	2	2
49	8	6	2	2
50	4	2	2	2
51	4	2	2	4
52	8	4	2	2
53	8	6	6	4
54	8	6	4	4
55	8	4	4	4
56	8	6	6	4
57	8	6	6	4
58	6	4	4	2
59	6	4	4	2
60	6	4	2	2

CERTIFICATE OF ENGLISH EDITING

This is to certify that the dissertation work topic
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during Micturition among children with Urinary tract infection admitted in
Urology Ward at Institute of Child Health and Hospital for Children, Chennai ”
done by Mrs. NIRMALA DEVI.M. K, M.Sc (N) II Year, College of
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