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Assessment on Effectiveness of Structured Teaching Programme on Urinary Incontinence among Patients at Selected Tertiary Hospital Coimbatore

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ABSTRACT

Urinary incontinence is a common problem causing discomfort, shame, loss of self confidence and thus its presence is significantly underreported. The study was to assess the knowledge on urinary incontinence among patients in PSG Hospitals, Coimbatore and pre-experimental research design was adopted for the study. As per the inclusion criteria, 30 patients were selected. The knowledge on urinary incontinence was assessed using questionnaire and pamphlets. 30 samples were assessed, 70% patients had adequate knowledge and 30% had moderately adequate knowledge. According to QUID scale, 90% patients experienced urge urinary incontinence and 10% patients experienced stress urinary incontinence. Hence there is significant association between demographic variables and the level of knowledge. This study concludes that assessing the knowledge on urinary incontinence and practice of pelvic floor muscle exercises among patients who experience urinary incontinence was helpful in increasing knowledge regarding urinary incontinence.

Keywords: Knowledge, Urinary incontinence, Pelvic floor muscle exercises

INTRODUCTION

"No human can call themselves free who does not own and control their body"

-Margaret Sanger

The continuum of human's life goes through infancy, childhood, puberty, sexual maturation, middle age and adulthood. The aging process is universal but not uniform. Human undergoes different physiological changes throughout his lifetime which may result in various health problems. Changes happen in different organ systems which may cause functional deterioration in sensation, cognition, respiration, digestion and elimination. One among them is urinary incontinence.

Urinary incontinence is defined as voluntary breakage of urine at unsocial times and inappropriate places. Urinary incontinence is a common problem with widespread human and social implications causing discomfort, shame, and loss of self confidence.

In healthy humans the process of urination is under voluntary control. In infants, elderly individuals and those with neurological injury, urination may occur as a reflex. Physiologically, urination involves coordination between the central, autonomic and somatic nervous system. In placental mammals, urine is drained through urinary meatus, a urethral opening in the male penis or female vulval vestibule.

Urinary incontinence is a problem that creates both physical and psychological nuisance to human. It is the complaint of leakage of urine which occurs in both sexes.

There are two main subtypes of urinary incontinence, stress and urge incontinence According to the International Continence Society (ICS) and International Urogynaecological Association (IUGA), stress incontinence is the complaint of urine

leakage in association with coughing, sneezing, or physical exertion whereas urge incontinence is the complaint associated with sudden compelling desire to void that is difficult to defer. (Indian Journal of Urology)

It can be a debilitating condition that affects quality of life and activities of daily living. Life's events can weaken pelvic muscles. Pregnancy, childbirth, being overweight in women and conditions especially benign prostate hyperplasia ,urinary tract infections and its associated problems in men can do it .This is preventable, curable and can be controlled too.

The part of your body including your hipbones is the pelvic area. At the bottom of the pelvic, several layers of muscle stretch between the legs. The muscles attach to front, back and sides of the pelvic bone. Two pelvic muscles do most of the work. The biggest one stretches like a hammock. The other is shaped like a triangle. Pelvic floor muscles are just like other muscles. Exercise can make them stronger. Luckily, when these muscles get weak, you can help make them strong again.

Pelvic floor muscle training is recommended as a first line treatment with symptoms of stress urinary incontinence, urge urinary incontinence or mixed urinary incontinence. Pelvic floor muscle exercises increase control over bladder, pelvic floor, supports vagina, uterus and bowel. Thus it keeps your pelvic floor in good working order and is beneficial for individuals of all ages and stages of life

NEED FOR THE STUDY

Urinary incontinence is an embarrassing problem to many people and thus its presence may be significantly underreported .It is a global problem and is associated with significant impact on quality of life of individual. The International Continence Society defines the symptom of urinary incontinence as "involuntary loss of urine" (Abrams et al., 2003).

In addition to the complaint of involuntary loss of urine, incontinence may be differentiated into signs and urodynamic observations. Signs observed by physician by simple methods are leak of urine on coughing or sneezing, use of pads, voiding diaries, diapers etc

This is usually an embarrassing problem shrouded in secrecy. It can be socially incapacitating problem leading to a loss of self confidence, feeling of helplessness, depression, decreased social contact, disturbance of sleep, isolation, anxiety and effects of sexual relationship.

Urinary incontinence affects substantial proportions of men, the estimated prevalence of urinary incontinence varied from 11% among those aged 60 to 64 years to 31% in older men. The prevalence in women differs from 5-72%. In all age group of women, stress urinary incontinence is more common (49%) followed by mixed (29%) and urge incontinence (21%).

Practical inconveniences associated with the leakage of urine such as frequent change of clothes and need to bath more often will have adverse effect on quality of life. Most of the individuals face mental challenges in expressing problems of urine leakage as it can affect the self-esteem of the person. Although not painful or life threatening, urinary incontinence has an insidious effect on quality of life on individuals. (W Stuaart R, 2019)

People with urinary incontinence are most likely to contact a healthcare provider if they use pads and if daily activities are impaired. As stress urinary incontinence usually results in only small amounts of urinary leakage, none of these triggers for seeking care may exists. In addition, men are more likely to seek medical care than women. Instead of seeking treatment, many individuals with urinary incontinence practice behavioural modifications such as limiting trips, fluids, and routine activities. Individuals often feel embarrassed or assume that urinary incontinence is a normal part of aging as a result; they may never

consult a provider about the problem. Furthermore, only 40% of patients who do consult a healthcare provider regarding urinary incontinence symptoms actually receive treatment and counseling.

Patients are reluctant to bring up the subject of urinary incontinence for many reasons and many barriers exist, including embarrassment, misconceptions that it is not a legitimate medical problem, attitude toward healthcare, duration of symptoms, severity of symptoms, and the impact on quality of life. The incontinence may worsen and the fear of odor in patients who were already managing urine leakage with pads or liners can be so embarrassing. Patients complaining of stress urinary incontinence can be managed and treated effectively.

They can be taught to contract the pelvic floor muscle when they feel the urge to void and possibly stop the detrusor contraction. Apart from pelvic floor muscle exercises training, they can be made aware about bladder training, bladder dairy, toilet training, double voiding, fluid and diet management. Hence they may gain time to reach the toilet without leakage. Learning such a technique and incorporating into daily activities can be classified as a form of "behavioural therapy" Write Introduction section of your research paper here.

LITERATURE REVIEW

Review of literature is one of the most important steps in the research process. It is an account of what is already known about the particular phenomenon. A review of literature is a description and analysis of literature relevant to a particular field or topic .It provides an over view of what already had been carried out, the key researchers who did that work, which of the questionnaires already answered regarding a particular area of research interest, methodologies followed and what are the prevailing theories and hypothesis

A literature review is a body of text that aim to review the critical point of knowledge on a particular topic of research. (ANA, 2000)

2.1 Literature related to incidence and prevalence of urinary incontinence.

2.2 Literature related to characteristics of urinary incontinence

2.3 Literature related to pelvic floor muscle exercises

2.1 Literature related to Incidence and prevalence of urinary incontinence.

An observational study was conducted to assess the quality of care provided to vulnerable older community based patients with urinary incontinence. 372 older participants were selected and quality indicators are passed for patients with urinary incontinence. As a result 36% of the patients reported urinary incontinence. Quality of care on urinary incontinence provided to vulnerable older patients was inadequate. (Gnanadesigan N, 2004)

A quality improvement project was conducted to develop and implement a protocol to promote continence in older adults, 80 years or more with urinary incontinence .Data were collected from a convenience sample of 26 participants. All participants were diagnosed with UI with Outcomes and Assessment Information Set (OASIS).The outcomes for these questions were assessed to examine change overtime in UI status and frequency. Participants completed 3-day bladder diary and education about risk factors, bladder training, pelvic floor exercises and hydration parameters .At pre-test, 100% of the participants were incontinent. At post test, 24 participants were continent. The result got was statistically significant (z=-3.83; p >0.001). There was significant decline in the median frequency of UI (Albertson, Maureen, 2018).

A descriptive study was conducted to measure the prevalence of urinary incontinence in a community dwelling sample on well being and activity in older men and women ≥65 years. Measures included the frequency of urgency incontinence, depression, positive and negative affect and social activity and self rated problems. The data was collected by

face to face interview and computer assisted telephone interviews. As a result of 796 participants, 28% experienced urgency incontinence and 21% reported stress incontinence with higher rates of women. (Sims J, 2011)

A descriptive study was conducted to investigate the prevalence of episodes of urinary incontinence associated with risk factors in children. A cross-sectional study was conducted and 240 children (8 to 17 years) were included, who completed pediatric defecation and fecal incontinence questionnaire. As a result the prevalence of episodes of urinary incontinence in the total group was 21.7%. Girls experienced urinary incontinence significantly more than boys and the most prevalent form of the urinary incontinence was stress urinary incontinence. (Linde JM, 2018)

A descriptive study was conducted to evaluate the incidence of stress urinary incontinence in physically active women and examines specific exercises that can increase stress urinary incontinence. A cross-sectional study was conducted in women and the participants were surveyed regarding the baseline demographics, activity levels, severity and frequency of leakage during cross fit exercises. 105 women were selected from cross fit centre and 44 women from aerobic centre. As a result fifty women reported stress urinary incontinence during exercises, while none of the aerobic women reported stress urinary incontinence during exercises. There is a significantly higher risk of urinary incontinence during cross fit exercises associated with previous pregnancy and vaginal delivery but also in nulliparous women. (Yang J, 2019)

A descriptive study was conducted to determine the prevalence and types of urinary incontinence in Korean women and analyzed their attitude towards treatment. 13,345 women aged 19 years or older were selected and were asked about the type of urinary incontinence that had experienced. As a result the overall prevalence of urinary incontinence is 24.4%, Of those women 48.8% reported stress urinary incontinence, 7.7% reported urge urinary incontinence, 41.6% reported mixed urinary incontinence. Urinary incontinence was more prevalent in women who are married, unemployed and undereducated. Stress urinary incontinence was the most prevalent type of urinary incontinence seen in women in Korea. (Lee KS, 2008)

A descriptive study was conducted to determine the prevalence of urinary incontinence in both sexes and to assess its impact on quality of life and sexual function. Voluntary health examinations are organized, incontinence questionnaire based on Bristol female urinary tract symptoms and based on various aspects of urinary incontinence, voiding problems.2,498 participants were analyzed. As a result 26.3% of women and 5% of men reported on the episodes of urinary incontinence and 65.7% of women and 58.3% of men reported that quality of life was affected by their incontinence. (Temml C, 2000)

A descriptive study was conducted to describe the prevalence and impact on quality of life of urinary incontinence in a older community dwelling Australian men. 47% of men were participated and international consultations on incontinence questionnaire were collected. As a result the prevalence of urinary incontinence was increasing from the age group of 70 to 74 years. Daily urine leakage was reported by 3% of men and urinary incontinence is common in older community dwelling men associated with worse quality of life. (Kwong PW, 2010)

2.2 Literature related to characteristics of urinary incontinence

A descriptive study was to examine associations among socio demographic characteristics, urinary incontinence characteristics, UI specific quality of life and self-esteem and use of complementary and alternative medicine (CAM) interventions for UI. Using correlational – descriptive research design, 394 female patients were selected from urology and gynecology outpatient clinics and after

completing the investigator developed questionnaire which included 2 validated instruments, King's Health Questionnaire (KHQ) and the Rosenberg Self esteem Scale. Variables associated with CAM use assessed using analysis, differences using t-test, relationship using correlation analysis.33% of women indicated using CAM, 52.6% respondents using prayer to manage their UI. Women using CAM reported both higher self-esteem and condition-specific health related quality of life than women who didn't use these interventions. (Altay, Birsen ,2018)

A descriptive was conducted to determine the characteristics of urinary incontinence in women and in which it affects patients' quality of life. 418 consecutive women aged 30 to 75 years were selected and the questionnaire was given, the questionnaire covered general health issues, symptoms of urinary incontinence and quality of life. As a result 148 women have reported the episodes of urinary incontinence and 44% reported the detrimental effect on quality of life. (Vinker S, 2001)

A descriptive study was conducted to describe the characteristics of urinary incontinence and related factors in incontinent homebound older adults. 90 participants were selected and they are referred to a clinical trial to examine the effectiveness of behavioural therapies in the treatment of urinary incontinence. As a result 57.1% reported stress urinary incontinence 37.7% reported urge urinary incontinence. Urinary incontinence tends to be more severe among cognitively intact homebound older adults. (McDowell BJ, 1996)

A descriptive study was conducted to define the nature and impact of urinary symptoms experienced by patients in community nursing services. The Leicestershire urinary symptoms questionnaire was given to 1078 patients, questionnaire includes type and severity of urinary symptoms and quality of life. As a result women were more likely than men to report the problem of urinary incontinence, 71.7% reported stress urinary incontinence and 86.3% reported urge urinary incontinence. (Cheater FM, 2008)

2.3 Literature related to pelvic floor muscle exercises

An experimental study was conducted to evaluate the effectiveness of pelvic floor muscle training exercises (PFMT) in reducing overactive bladder (OAB) symptoms among women. In this Qualitative methodology, evaluation was done using PEDro scale. As a result, the scores varied between 4 and 7 in PEDro scale with the objective of controlling urgent micturition and the quality of life in women with overactive bladder (OAB) was improved (Monteiro S, 2018)

A comparative study was conducted to determine the effectiveness of pelvic floor muscle training (PFMT) exercises in the prevention and treatment of urinary incontinence among antenatal and postnatal women. The assessment was done using GRADE approach. As a result ,antenatal PFMT has a lowered the risk of reporting urinary incontinence(62% less risk ratio,95% confidence interval) and the antenatal PFMT has decreased the risk of urinary incontinence in the mid postnatal period and in late pregnancy.(Woodley SJ,2017)

A comparative study was conducted to examine the effectiveness of pelvic floor muscle training exercises for urinary incontinence among premenopausal and postmenopausal women. The retrospective methodological study was done to interpret the results. As a result 59% of the premenopausal women and 70% postmenopausal women showed the reduction of urinary incontinence. (Betschart C, 2013).

An experimental study was conducted to determine the effectiveness of antenatal pelvic floor muscle exercises on bladder neck descent in nulliparous pregnancy .Two hundred and nineteen nulliparous women pregnant between 8 to 12 weeks were interviewed and selected, 108 women for pelvic floor muscle training

group and 111 women for control group. They were taught with 15 contractions held for 5 seconds followed by rest for 5 seconds. They were asked to repeat for three times after each meal. Mean average was 26.51±5.41 for PFMT and 26.95±3.94 for control group. In the first trimester, the average bladder neck descent of the PFMT group was slightly higher than the control group. As a result, antenatal pelvic floor muscle exercises may reduce bladder neck motility at 6 months after childbirth. (Lekskulchai.O,2014)

MATERIALS & METHODS

OBJECTIVES:

- To assess the knowledge on urinary incontinence among patients.
- To assess the effectiveness of structured teaching programme on management of urinary incontinence among patients.
- To associate the level of knowledge on management on urinary incontinence with selected demographic variables
- To diagnose the type of incontinence for clinical evaluation in an inpatient uro gynecology setting

ASSUMPTION:

Patients will have some knowledge about management of urinary incontinence

Structured teaching programme will provide a positive effect on knowledge on management of incontinence

HYPOTHESIS:

H_1: There will be a significant difference between pre and post test level of knowledge on Urinary incontinence among patients.

H2: There will be significant association between the level of knowledge on urinary incontinence with selected demographic variables among patients.

DELIMITATIONS:

This study is delimited to a selected patients who are admitted in PSG Hospitals in Urology ward, Medical ward and Obstetrics and Gynecology ward.

OPERATIONAL DEFINITION:

Effectiveness:

In this study, it refers to the degree to which targeted teaching is successful in producing a desired result.

Knowledge:

In this study, it refers to understanding and ability to answer regarding pelvic floor exercises through interview schedule

Structured Teaching Programme:

In this study, it refers to a systematically developed instructional programme using various instructional aids designed to provide information.

Urinary Incontinence:

Incontinence defines as voluntary leakage of urine at unsocial times and inappropriate places.

Urine loss with excretion or (Straining, Laughing, Coughing), typically associated with pelvic relaxation and displacement of the urethrovesical junction is known as Stress incontinence.

Urine leakage due to involuntary and uninhibited bladder contraction known as detrusor instability or Urge incontinence

PROJECTED OUTCOME:

Structured teaching program on urinary incontinence will improve the knowledge of patients regarding management of urinary incontinence

CONCEPTUAL FRAMEWORK:

"Modified Pender's Health Promotion Model 2006"

Conceptual framework act as a building block for the research study. The overall purpose of framework is to make scientific finding meaningful and generalized. It provides a certain framework of reference for clinical attitude, education and research.

A conceptual model or conceptual framework broadly can explain phenomena of knowledge regarding urinary incontinence among patients.

The conceptual framework for this study is based on Modified pander's health promotion model 2006. It is a competent or approach-oriented model that depicts the multidimensional nature of persons

interacting with their interpersonal and physical environment as they pursue health. We have selected this model because it is based on the components of the study. So the investigator felt the health promotion model suitable as conceptual frame work for the study.

This model describes the three aspects or sets of variables, they are:

1. Individual characteristics.
2. Assessment of knowledge on urinary incontinence.
3. Behavioral outcome.

1. Individual characteristics:

The importance of an individual's unique personal factors and experience will depend on the target for health promotion. It includes personal factors.

Personal factor:

The personal factor includes demographic data of patients who experience urinary incontinence such as age, gender, religion, marital status, educational status, occupational status, weight, height, number of births, type of delivery, age of menopause, age at first delivery, history of diabetes mellitus, history of uterine disorders, history of urinary tract infection, history of surgery.

2. Assessment of knowledge on urinary incontinence:

1. Perceived benefits of action.
2. Perceiver barrier to action.
3. Perceived self-efficacy.
4. Commitment to a plan of action.

Perceived benefits of action:

Patient who experiences urinary incontinence possess knowledge on urinary incontinence and practice of pelvic floor muscle exercises.

Perceiver barrier to action:

Lack of knowledge negligence and fair attitude of the knowledge on urinary incontinence and practice of pelvic floor muscle exercises.

Perceived self-efficacy:

Patient who experience urinary incontinence willingness to learn and ability to follow the pelvic floor muscle exercises.

Commitment to a plan of action:

Assessment of knowledge on urinary incontinence among patients

3. Behavioral outcome:

Knowledge: Adequate knowledge, moderately adequate knowledge, inadequate knowledge.

Health promoting behavior:

Investigator prepared pamphlet and given for patients who experience urinary incontinence for utilizing it and gaining knowledge.

STATISTICAL ANALYSIS

RESEARCH APPROACH AND DESIGN:

Research approach:

An experimental approach is a scientific investigation in which observations are made and data are collected, according to set of well-defined criteria. In this study, pre-experimental design will be used. Pretest and posttest will be used.

O1 × O2

O1- Pretest to assess the knowledge on urinary incontinence

O2- Posttest to assess the knowledge on pelvic floor exercises on urinary incontinence

× - Structured teaching program on urinary incontinence

Research design:

Pre -experimental - one group pre test post test design

VARIABLE OF THE STUDY:

Independent variable:

Effectiveness of structured teaching programme.

Dependent variable:

Knowledge on urinary incontinence.

SETTING OF THE STUDY:

The study was conducted in selected hospitals in Coimbatore.

The study was conducted among 30 patients who had urinary incontinence.

POPULATION AND SAMPLING:

The sampling technique used in the study was purposive sampling. The calculated sample size was 30 patients. Pretest was conducted for all 30 samples, followed by structured teaching program, after which posttest was conducted for all this samples. Sample size =30

SAMPLE SELECTION CRITERIA:

Inclusive criteria

- Patients with incontinence
- Patients with past history of any gastrointestinal and gynecological surgeries
- Men with urological conditions like benign prostate hypertrophy, bladder outlet obstruction
- Patients with urinary tract infections
- Post Menopausal women
- Patients with pelvic inflammatory diseases or uterine prolapse and other gynecological disorders

Exclusive criteria:

- Those who are already under treatment for incontinence
- Those who are on their first postoperative day.

INSTRUMENTS AND TOOLS FOR DATA COLLECTION:

Section A:

It consists of demographic data and baseline data including name, age, sex, education, occupation, height, weight, parity, type of delivery, age of menopause, history of UTI, history of diabetes, history of any surgical interventions.

Section B:

It consists of questionnaires to assess the knowledge regarding management of urinary incontinence. In this questionnaire, 7 questions are based on general information, 8 questions on knowledge and attitude on incontinence and 5 questions based on prevention and management of incontinence

Using Purposive sampling technique, 30 samples were selected. They were subjected for an interview session followed by a distribution of pre test questionnaire. Pamphlets consisting of definition, causes, risk factors, signs and symptoms, prevention and management followed by the demonstration of pelvic floor muscle exercises. On the fourth day, post test was conducted for same subjects and results were drawn.

Section- C

QUID

This consists of standardized questionnaire for urinary incontinence diagnosis(QUID) which consists of six questions .Each item scores 0(None of the time),1(Rarely),2(Once in a while), 3(often), 4(Most of the time), or 5(All of the time). Responses to items 1,2 and 3 are summed for the stress score; and responses to items 4, 5 and 6 for the urge score.

Diagnosis (Type of Incontinence) and percentage:

Stress urinary incontinence (Responses to items 1,2 and 3) has <50% chance of getting urinary incontinence and Urge urinary incontinence (Responses to items 4,5 and 6) has 51 - 75% chance of getting urinary incontinence.

VALIDITY AND RELIABILITY OF THE TOOL:

Validity:

The tool was submitted to the nursing experts, the physician and the tool was modified based on the suggestions.

TECHNIQUE FOR DATA COLLECTION:

The total population of the study was 30 patients. The knowledge of management of urinary incontinence was assessed among 30 patients. Survey was done and identified that 50 patients had the problems of urinary incontinence. Through the inclusion and exclusion criteria, 30 patients were selected as participants. After getting consent, the pretest was conducted by using questionnaires and followed by structured teaching program, after that post test was conducted by using same questionnaires.

DATA COLLECTION PROCEDURE:

- Ethical approval obtained from the institutional human ethical committee.

- Formal permission obtained from the authorities of selected hospitals.
- Informed consent obtained from the participants.
- Appropriate orientation was given to the subject about the aim of the study.
- Pretest was conducted to assess the knowledge regarding management of urinary incontinence using questionnaire.
- Individual teaching was given on the management of urinary incontinence.
- The post test of the study was conducted on sixth day of data collection using the same questionnaire.

ETHICAL APPROVAL:

Ethical clearance obtained from the institutional human ethical committee. Confidentiality and anonymity was maintained throughout the study. Informed consent was obtained from the study samples.

DATA ANALYSIS PLAN:

The data was analyzed using descriptive and inferential statistics.

Descriptive statistics:

The method used in Descriptive statistics is Mean, Standard deviation, Frequency, Percentage and that was to describe the demographic variables of samples to assess the level of knowledge regarding pelvic floor muscle exercises.

Inferential Statistics:

The method used in inferential statistics was paired t-test and chi-square test.

Paired t-test was to compare the pre and post test scores of level of knowledge on urinary incontinence among patients

Chi-square test was to find out the association between the demographic data and level of knowledge on urinary incontinence among patients.

ORGANIZATION AND PRESENTATION OF DATA:

- The data collected were organized and presented under following sections.
- Description of demographic variables of patients with urinary incontinence
- Assessment of pretest level of knowledge on urinary incontinence among patients
- Assessment of post test level of knowledge on urinary incontinence among patients
- Effectiveness of structured teaching programme on urinary incontinence among Patients
- Association of pre test level of knowledge on urinary incontinence among patients
- Association of post test level of knowledge on urinary incontinence among patients

Description of demographic variables of patients

Table 4.1 (a): Frequency and percentage distribution of demographic variables of knowledge on urinary incontinence among patients with age, gender, weight and height n = 30

S.NO	Demographic variables (patients)	Frequency	Percentage
1	**AGE**		
	(a) 20 – 40 years	21	67
	(b) 41 – 60 years	5	17
	(c) 61 – 80 years	4	13
	(d) 81 – 100 years	1	3
2	**GENDER**		
	(a) Male	8	27
	(b) female	22	73
3	**WEIGHT**		
	(a) 50 - 60 kg	8	27
	(b) 61 -70 kg	16	53
	(c) 71 - 80 kg	5	17
	(d) 81 - 90 kg	1	3
4	**HEIGHT**		
	(a) 150 - 160 cm	15	50
	(b) 161 - 170 cm	15	50
	(c) 171 - 180 cm	_	_
	(d) 181 – 190 cm	_	_

Table 4.1 (a) debits that among 30 patients with urinary incontinence, 20 patients under the age of 20 – 40 years, 5 patients under the age of 41 – 60 years, 4 patients under the age of 61 – 80 years, 1 patient under the age of 81 – 100 years.

Table 4.1 (a) debits that among 30 patients with urinary incontinence, 8 were male and 22 were females.

Table 4.1 (a) debits that among 30 patients with urinary incontinence, 8 were under 50-60 kg, 16 were under 61-70kg, 5 were under 71-80kg and 1 were under 81-90kg.

Table 4.1 (a) debits that among 30 patients with urinary incontinence, 15 came under 150 – 160cm, 15 came under 161 – 170cm.

Table 4.1 (b): Frequency and percentage distribution of demographic variables of knowledge on urinary incontinence among patients with Educational status, Occupational status, Number of births and Type of delivery n=30

S.NO	Demographic variables (patients)	Frequency	Percentage
5	**EDUCATION**		
	(a) Primary education	7	23
	(b) Secondary education	9	30
	(c) Graduated	12	40
	(d) Uneducated	2	7
6	**OCCUPATIONAL STATUS**		
	(a) House wife	21	71
	(b) coolie	4	13
	(c) private employee	4	3
	(d) government employee	1	13
7	**NUMBER OF BIRTHS**		
	(a) 1	10	33
	(b) 2	10	33
	(c) 3	3	10
	(d) 4 and above	4	14
	(e) none	3	10
8	**TYPE OF DELIVERY**		
	(a) normal vaginal delivery	12	40
	(b) caesarean delivery	6	20
	(c) not applicable	12	40

Table 4.1 (b) debits that among 30 patients with urinary incontinence, 7 gained primary education,9 gained secondary education,12 were graduated and 2 were uneducated.

Table 4.1 (b) debits that among 30 patients with urinary incontinence, 21 were home makers,4 were working as coolie,1 as a government employee and 4 working under private companies.

Table 4.1 (b) debits that among 30 patients with urinary incontinence,10 patients had 1 child ,10 patients had 2 children, 3 patients had 3 children,4 patients had more than 4 children, and 3 of them had none.

Table 4.1 (b) debits that among 30 patients with urinary incontinence, 12 patients had normal delivery, 6 patients had undergone LSCS and this was not applicable for 12 patients.

Table 4.1 (c) debits that among 30 patients with urinary incontinence, 2 patients attained menopause at the age of 46- 50 years, 2 patients attained at 51-55 years, 2 patients attained at 56-60 years, and this was not applicable for 24 patients.

Table 4.1 (c) debits that among 30 patients with urinary incontinence, all 30 were married.

Table 4.1 (c): Frequency and percentage distribution of demographic variables of knowledge on urinary incontinence among patients with Age of menopause, Marital status, Age at first delivery, Religion. n=30

S.NO	Demographic variables (patients)	Frequency	Percentage
9	**AGE OF MENOPAUSE**		
	(a) 40 – 45 years	_	_
	(b) 46 – 50 years	2	7
	(c) 51 – 55 years	2	7
	(d) 56 – 60 years	2	7
	(e)not applicable	24	79
10	**MARITAL STATUS**		
	(a) single	_	_
	(b) married	30	100
11	**AGE AT FIRST DELIVERY**		
	(a) 15 – 20 years	2	**7**
	(b) 21 – 25 years	14	47
	(c) 26 – 30 years	4	13
	(d) 31 – 35 years	1	3
	(e)not applicable	9	30
12	**RELIGION**		
	(a) Hindu	23	77
	(b) Muslim	5	17
	(c) Christian	2	6
	(d) Others	_	_

Table 4.1 (c) debits that among 30 patients with urinary incontinence, 2 patients had delivered at the age of 15-20 years, 15 patients at the age of 21-25 years, 4 patients at the age of 26-30 years, and this was not applicable for 9 patients.

Table 4.1 (c) debits that among 30 patients, 21 patients were Hindus, 5 patients were Muslims and 2 patients were Christians.

Table 4.1 (d): Frequency and percentage distribution of demographic variables of knowledge on urinary incontinence among patients with History of surgery, History of any uterine disorders, History of urinary tract infection, History of diabetes n=30

S. NO	Demographic variables (patients)	Frequency	Percentage
13	**HISTORY OF SURGERY**		
	(a) yes	8	27
	(b) no	22	73
14	**HISTORY OF ANY UTERINE DISORDERS**		
	(a) yes	1	3
	(b) no	8	70
	(c) not applicable	21	27
15	**HISTORY OF URINARY TRACT INFECTION**		
	(a) yes	6	20
	(b) no	24	80
16	**HISTORY OF DIABETES**		
	(a) yes	8	27
	(b) no	22	73

Table 4.1 (d) debits that among 30 patients, 8 patients had previous history of surgery and 22 patients had no history of surgeries.
Table 4.1 (d) debits that among 30 patients,1 patient had a history of uterine disorder, 21 patients had no such history, and this was not applicable for 8 patients
Table 4.1 (d) debits that among 30 patients, 6 patients had the history of Urinary tract infection and 24 patients had no such history.
Table 4.1 (d) debits that among 30 patients, 8 patients had diabetes and 22 patients had not got such history.

4.2 Assessment of pretest level of knowledge on urinary incontinence among patients.

Table 4.2: Frequency and percentage distribution of pretest of knowledge on urinary incontinence among patients n=30

S. No	Knowledge Level	Score	Frequency	%
1.	Inadequate	< 50%	26	87
2.	Moderately adequate	51- 75%	4	13
3.	Adequate	>75%	_	_

Table 4.2 debits that 87% (26 patients) of patients has inadequate knowledge on urinary incontinence on pretest, whereas 4 patients (13%) has moderately adequate knowledge

Fig 4.2 Frequency and percentage distribution of pretest level of knowledge on urinary incontinence among patients

4.3 Assessment of posttest level of knowledge on urinary incontinence among patients

Table 4.3: Frequency and percentage distribution of posttest of knowledge on urinary incontinence among patients n=30

S.NO	Knowledge level	Score	Frequency	%
1.	Inadequate	< 50%	_	_
2.	Moderately adequate	51- 75%	9	30
3.	Adequate	>75%	21	70

Table 4.3 debits that posttest level of knowledge of 9 patients (30%) is moderately adequate, whereas 21 patients (70%) has adequate knowledge.

Figure 4.3 Frequency and percentage distribution of posttest level of knowledge on urinary incontinence among patients

4.4 Structured teaching programme on Urinary incontinence among patients.

Table 4.4: Comparison of pretest and posttest level of knowledge on urinary incontinence among patients . n=30

S. No	Characteristic	Pre test		Post test		Mean difference
		Mean	S.D	Mean	S.D	
1.	Patients knowledge assessment	11.6	3.16	22.6	4.0	11

Table 4.4 debits that the mean and standard deviation of pre test knowledge of patients is 11.6 and 3.16 respectively whereas the mean and standard deviation of post test knowledge of patients after structured teaching programme is 22.6 and 4.0 respectively. The Mean difference is 11 and t- value is 2.7.
H1: There is a significant difference between pre and post test level of knowledge on Urinary incontinence among patients.

4.5 Association of pretest level of demographic variables

Table 4.5 (a) Association of pretest knowledge on urinary incontinence among patients with demographic variables such as age in years, gender, weight and height n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2
	No.	%	No.	%	No.	%	
Age in years							
20 – 40 years	16	53	4	13	_	_	9.44
41 – 60 years	5	18	_	_	_	_	
61 – 80 years	4	13	_	_	_	_	
81- 100 years	1	3	_	_	_	_	
Gender							
Male	8	27	_	_	_	_	0.59
Female	18	60	4	13	_	_	
Weight							
50 – 60kg	8	28	_	_	_	_	

61 – 70kg	14	47	2	6	_	_	40.3
71 – 80kg	3	10	2	6	_	_	
81 – 90kg	1	3	_	_	_	_	
Height							
150 – 160cm	14	47	1	3	_	_	1.14
161 – 170cm	12	40	3	10	_	_	
171 – 180cm	_	_	_	_	_	_	
181 – 190cm	_	_	_	_	_	_	

****p<0.05, S-Significant, NS-Not significant**

Table 4.5(a) shows that there is significant association between the level of knowledge on urinary incontinence and demographic variables (weight) and there is no significant association between demographic variables like age, gender and height.

Table 4.5 (b) Association of pretest knowledge on urinary incontinence among patients with demographic variables such as educational status, occupational status and number of children. n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2 Value
	No.	%	No.	%	No.	%	
Educational status							
Primary education	6	20	1	3		_	1.63
Secondary education	9	30	_	_	_	_	
Graduated	9	30	3	10	_	_	
Uneducated	2	6	_	_	_	_	
Occupational status							
Home maker	17	58	4	13	_	_	0.76
Coolie	4	13	_	_	_	_	
Government employee	1	3	_	_	_	_	
Private employee	4	13	_	_	_	_	
Number of children							
1	8	27	2	6	_	_	1.02
2	8	27	2	6	_	_	
3	3	10	_	_	_	_	
4 and above	4	13	_	_	_	_	
None	3	10	_	_	_	_	

****p<0.05, S-Significant, NS-Not significant**

Table 4.5(b) shows that there is no significant association between the level of knowledge on urinary incontinence and demographic variables like educational status, occupational status and number of children

Table 4.5 (c) Association of pretest knowledge on urinary incontinence among patients with demographic variables such as method of delivery, age of menopause, marital status and age at first delivery. n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2
	No.	%	No.	%	No.	%	
Method of delivery							
Normal vaginal delivery	9	30	3	10	_	_	0.697
Caesarean delivery	5	17	1	3	_	_	
Not applicable	12	40	_	_	_	_	
Age of Menopause							
40 – 45 years	_	_	_	_	_	_	2.46
46 – 50 years	2	7	_	_	_	_	
51 – 55 years	1	3	1	3	_	_	
56 – 60 years	2	7	_	_	_	_	
Not applicable	21	70	3	10	_	_	
Marital status							
Single	_	_	_	_	_	_	0
Married	26	87	4	13	_	_	
Widow	_	_	_	_	_	_	
Separated	_	_	_	_	_	_	
Age at first delivery							
15 – 20 years	2	7	_	_	_	_	1.82
21 – 25 years	11	37	4	13	_	_	
26 – 30 years	4	13	_	_	_	_	
31 – 35 years	_	_	_	_	_	_	
Not applicable	9	30	_	_	_	_	

****p<0.05, S-Significant, NS-Not significant**

Table 4.5(c) shows that there is significant association between the level of knowledge on urinary incontinence and demographic variables (age of menopause) and there is no significant association between demographic variables like method of delivery, marital status, age at first delivery

Table 4.5 (d) Association of pretest knowledge on urinary incontinence among patients with demographic variables such as religion, history of uterine disorders, history of urinary tract infection, history of diabetes, history of surgery. n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2 value
	No.	%	No.	%	No.	%	
Religion							
Hindu	19	63	4	13	_	_	0.46
Muslim	5	17	_	_	_	_	
Christian	2	7	_	_	_	_	
Others	_	_	_	_	_	_	
History of uterine disorders							
Yes	1	3	_	_	_	_	0.751
No	17	56	4	13	_	_	
Not applicable	8	28	_	_	_	_	
History of urinary tract infection							
Yes	6	20	_	_	_	_	0.35
No	20	67	4	13	_	_	
History of diabetes mellitus							
Yes	8	28	_	_	_	_	0.602
No	18	59	4	13	_	_	
History of surgery							
Yes	6	20	1	3	_	_	0.007
No	20	67	3	10	_	_	

****p<0.05, S-Significant, NS-Not significant**

Table 4.5(d) shows that there is no significant association between the level of knowledge on urinary incontinence and demographic variables like religion, history of uterine disorders, history of urinary tract infections, history of diabetes mellitus and history of surgery.

4.6 Association of posttest level of demographic variables

Table 4.6 (a) Association of post test knowledge on urinary incontinence among patients with demographic variables such as age in years, gender, weight and height n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2 value
	No.	%	No.	%	No.	%	
1.Age in years							
20 – 40 years	_	_	6	20	14	48	1.87
41 – 60 years	_	_	1	3	4	13	
61 – 80 years	_	_	1	3	3	10	
81- 100 years	_	_	1	3	_	_	
2.Gender							
Male	_	_	1	3	8	27	1.58
Female	_	_	7	23	14	47	
3.Weight							
50 – 60kg	_	_	1	3	7	25	3.46
61 – 70kg	_	_	6	20	10	33	
71 – 80kg	_	_	1	3	4	13	
81 – 90kg	_	_	1	3	_		
4.Height							
150 – 160cm	_	_	6	20	9	30	0.78
161 – 170cm	_	_	3	10	12	40	
171 – 180cm	_	_	_	_	_	_	
181 – 190cm	_	_	_	_	_	_	

****p<0.05, S-Significant, NS-Not significant**

Table 4.6(a) shows that there is significant association between the level of knowledge on urinary incontinence and demographic variables (weight) and there is no significant association between demographic variables like age, gender and height.

Table 4.6 (b) Association of post test knowledge on urinary incontinence among patients with demographic variables such as educational status, occupational status and number of children n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2 value
	No.	%	No.	%	No.	%	
5.Educational status							
Primary education	_	_	3	10	4	13	1.87
Secondary education	_	_	3	10	6	20	
Graduated	_	_	2	7	10	34	
Uneducated	_	_	1	3	1	3	
6.Occupational status							
Home maker	_	_	8	29	13	44	1.33
Coolie	_	_	_	_	4	14	
Government employee	_	_	_	_	1	3	
Private employee	_	_	_	_	3	10	
7.Number of children							
1	_	_	3	10	7	23	1.18
2	_	_	3	10	7	23	
3	_	_	_	_	3	10	
4 and above	_	_	2	7	2	7	
None	_	_	1	3	2	7	

****p<0.05, S-Significant, NS-Not significant**

Table 4.6(b) shows that there is no significant association between the level of knowledge on urinary incontinence and demographic variables like educational status, occupational status and number of children

Table 4.6 (c) Association of post test knowledge on urinary incontinence among patients with demographic variable such as method of delivery, age of menopause, marital status and age at first delivery n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2
	No.	%	No.	%	No.	%	
Method of delivery							
Normal vaginal delivery	_	_	5	17	7	23	1.91
Caesarean delivery	_	_	1	3	5	17	
Not applicable	_	_	3	10	9	30	
Age of Menopause							
40 – 45 years	_	_	_	_	_	_	
46 – 50 years	_	_	2	7	_	_	
51 – 55 years			1	3	1	3	4.89
56 – 60 years			1	3	1	3	
Not applicable			5	17	19	64	
Marital status							
Single	_	_	_		_		0
Married	_		9	30	21	70	
Widow	_	_	_	_	_	_	
Separated	_	_	_	_	_	_	
Age at first delivery							
15 – 20 years	_	_	2	7	_		8.8
21 – 25 years	_	_	4	13	11	36	
26 – 30 years	_	_	2	7	2	7	
31 – 35 years	_	_	_	_	_	_	
Not applicable	_	_	1	3	8	27	

****p<0.05, S-Significant, NS-Not significant**

Table 4.6(c) shows that there is significant association between the level of knowledge on urinary incontinence and demographic variables (age of menopause and age at first delivery) and there is no significant association between demographic variables like method of delivery and marital status.

Table 4.6(d) shows that there is significant association between the level of knowledge on urinary incontinence and demographic variables (history of uterine disorders) and there is no significant association between demographic variables like religion, history of urinary tract infection, history of diabetes mellitus and history of surgery.

Table 4.6 (d) Association of post test knowledge on urinary incontinence among patients with demographic variables such as religion, history of uterine disorders, history of urinary tract infection, history of diabetes, history of surgery. n=30

Demographic variables	Inadequate knowledge (<50%)		Moderately adequate knowledge (50 – 75%)		Adequate knowledge (>75%)		χ^2
	No.	%	No.	%	No.	%	
Religion							
Hindu	_	_	8	27	15	50	0.74
Muslim	_	_	1	3	4	13	
Christian	_	_	_	_	2	7	
Others	_	_	_	_	_	_	
History of uterine disorders							
Yes	_	_	1	3	_	_	3.26
No	_	_	7	23	14	48	
Not applicable	_	_	1	3	7	23	
History of urinary tract infection							
Yes	_	_	1	3	5	17	0.63
No	_	_	8	27	16	53	
History of diabetes mellitus							
Yes	_	_	1	3	7	23	1.6
No	_	_	8	27	14	47	
History of surgery							
Yes	_	_	2	7	6	20	0.12
No	_	_	7	23	15	50	

****p>0.05, S-Significant, NS-Not significant**

Table 4.7 To diagnose the type of incontinence for clinical evaluation in an inpatient uro gynecology setting among the patients who are experiencing urinary incontinence: n = 30

	Response to items 1,2 and 3 (Stress urinary incontinence)	Response to items 4,5 and 6 (Urge urinary incontinence)
Frequency	3	27
Percentage (%)	10	90

Table 4.7 debits the response of the patients with urinary incontinence, 27(90%) patients experienced urge urinary incontinence and 3(10%) of them experienced stress urinary incontinence.

RESULT AND DISCUSSION

Observations/Results of your study should be written in this section along with tables/charts/figures etc. write serial numbers and appropriate heading/title of tables and legend/caption of figures.

In order to find a meaningful answer to research question, the collected data may be processed, analyzed in some orderly manner, so that the pattern and the relationship may be discussed .This chapter deals with the analysis and interpretation of data collected from 30 samples of patients with urinary incontinence in a tertiary hospital, Coimbatore.

The aim of the study was to assess the effectiveness of structured teaching programme on patients with urinary incontinence in selected tertiary hospitals, Coimbatore.

5.1 The first objective was to assess the level of knowledge of 30 patients with urinary incontinence:

In the present study which was done to assess the knowledge, 87% had inadequate knowledge and 13% had moderately adequate knowledge ,and after the structured teaching programme on the knowledge on urinary incontinence and practice of pelvic floor muscle exercises, 70% had adequate knowledge, 30 % had moderately adequate knowledge.

5.2 Effectiveness of structured teaching programme on urinary incontinence among patients:

Table 5.2 shows the mean value of pre test was 11.6 and was increased in post test to 22.6. The difference between the pre test and post test mean was 11. The ‘t’ value was 2.7, which had the statistical significance at p>0.05 level which confirms that there was a statistically significant difference between pre test and post test among patients.

A similar study was conducted to implement a protocol to promote continence in older adults. As a result, at pre test 100% of the samples had incontinence and in post test 24 samples had continence. The result got significant statistically ($\chi 2 = 3.83$; $p>0.05$). There shows the significant decline in the frequency. (Albertson, Maureen, 2018)

5.3 To identify the association on the knowledge on urinary incontinence and practice of pelvic floor muscle exercises among the patients who are experiencing urinary incontinence:

Table 5.3 shows that there is significant association with the effectiveness of structured teaching programme and weight $\chi 2 = 2.57$, age of menopause $\chi 2 = 2.31$, age at first delivery $\chi 2= 2.31$, history of uterine disorders $\chi 2 = 2.78$. It was inferred that weight, age of menopause, age at first delivery and history of uterine disorders had association with the effectiveness of structured teaching programme on urinary incontinence among patients who were experiencing urinary incontinence.

A similar study was conducted to determine the effectiveness of pelvic floor muscle exercises in nulliparous pregnancy. Mean average was 26.51±5.41 for pelvic floor muscle training group and 26.95±3.94 for control group. As a result, antenatal pelvic floor muscle exercises reduce the motility at 6 months. (Lekskulchai.O, 2014)

5.4 To diagnose the type of incontinence for clinical evaluation in an inpatient uro gynecology setting among the patients who are experiencing urinary incontinence:

Table 5.4 shows the response of the patients with urinary incontinence, 27(90%) patients experienced urge urinary incontinence and 3(10%) of them experienced stress urinary incontinence.

A similar study was conducted to describe the characteristics of urinary incontinence in homebound older adults. As a result 57.1% reported stress urinary incontinence and 37.7% have reported urge urinary incontinence and tends to be more severe in home bound adults. (McDowell BJ, 1996)

SUMMARY

The study was conducted to assess the effectiveness of structured teaching programme on urinary incontinence among the patients. A pre-experimental one group pre test – post test research design was used in this study. According to the inclusion criteria, the patients who were experiencing urinary incontinence were selected. A standardized tool (QUID) was used to interpret the type of incontinence. The data was analyzed and the results were concluded.

Major findings of the study:

Among the 30 study participants, 8(27%) patients weighed between 50 – 60 kg, 16(53%) weighed between 61 – 70 kg, 5(17%) weighed 71 – 80 kg and 1(3%) weighed 81 – 90kg.

Majority of them are weighed between 61 – 70kg

Among the 30 study participants, 2(7%) attained menopause during 46-50 years,2(7%) attained at 51-55 years,2(7%) attained at 56-60 years and this was not applicable for 24(79%) patients

Majority of them have not attained menopause.

Among the 30 study participants, 2(7%) had their first delivery at the age of 15 – 20 years,14(47%) at the age of 21-25 years,4 (13%) at 26-30 years,1 at 31-35 years and this was not applicable for 9(30%)patients.

Majority of them had their first delivery between the age of 21 – 25 years.

Among the 30 study participants, 1(3%) had a history of uterine disorder, 21 (27%) doesn't has uterine disorder, and this was not applicable for 8(70%)patients.

Majority of them had no history of uterine disorders.

Majority of the patients 70% improved their knowledge after the structured teaching programme on the knowledge of urinary incontinence and practice of pelvic floor muscle exercises.

The study finding showed that there is significant association between the demographic variables and the knowledge level.

CONCLUSION

The primary responsibility of the nursing student is to have a better understanding on urinary incontinence and the pelvic floor muscle exercises. Hence knowledge assessment among the patients about the urinary incontinence and pelvic floor muscle exercises was assessed.

Nursing implication:

The present study has implication for Nursing practice, Nursing education, Nursing administration and Nursing research.

Nursing Practice:

The nurse as the health professional can conduct an awareness programme to improve the knowledge on urinary incontinence and the practice of pelvic floor muscle exercises.

Nursing Education:

Integration of theory and practice is a vital need and it is important in nursing profession, therefore the nurse can use the result of the study as information to target population. Nursing students can also reinforce about the pelvic floor muscle exercises and urinary incontinence.

Nursing Administration:

The nurse as an administrator can plan and organize continuing nursing education programme among the nursing professionals and motivate them to conduct awareness programme.

Nursing Research:

One of the aims of nursing research is to expand and broaden the scope of nursing. The finding of the study will help the future researchers to explore other aspects of problems faced by the people who are experiencing urinary incontinence. Advanced technology and development of various programmes can bring better knowledge on urinary incontinence. However the future research is needed for the utilization of those programmes and problems faced by the patients who are experiencing urinary incontinence.

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