

# A study to assess the effectiveness of planned teaching programme on knowledge of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter.

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**Abstract-** A One group pre-test post-test experimental study to assess the effectiveness of planned teaching program on knowledge of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter. The sample consisting of 90 staff nurses was selected by using simple random sampling. The tool comprised of structured self-administered questionnaire. The pretest was conducted and the planned teaching program was administered. The post test was conducted after one week. The data obtained were analyzed by using differential and inferential statistics. The mean score of post-test knowledge 21.53 (71.76%) was apparently higher than the mean score of pre-test knowledge 13.51 (45.03%), suggesting that the planned teaching programme was effective in increasing the knowledge of the staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter. The mean difference 8.02 between pre-test and post-test knowledge score of the staff nurses was found to be significant.

**Index Terms-** Urinary tract infection, Indwelling catheter, One group pre – test post – test experimental study

## I. INTRODUCTION

Urinary tract infection (UTI) usually refers to the presence of bacteria (> 10<sup>5</sup> bacteria per ml of urine) in the urinary tract together with symptoms, and sometimes signs, of inflammation. It is characterized by frequency of micturation, dysuria, Pyuria, nicturia, fever, occasional suprapubic pain, and haematuria. UTI is one of the most commonly occurring bacterial Infections among men and women

Empirical antibiotic therapy is usually applied here and for this, knowledge of the common uro-pathogens and their susceptibility to commonly used antibiotics is needed. Treatment becomes even more challenging in the presence of risk factors such as higher age, co morbidity, and immunosuppressant. Many times, physicians resort to prescribing broad-spectrum antibiotics over specific antibiotics in the view of resistance of the causative organism to the antibiotic. Poor patient compliance and incomplete course of antibiotic therapy have resulted in the evolution of resistance to many of these antibiotics. Various studies done worldwide have shown changing patterns in the

etiology of UTIs. However, studies on UTI and the pattern of antibiotic resistance in India are few. The present trends of the uro-pathogens and their susceptibility to various antibiotics are essential to formulate guidelines for the empirical treatment of UTIs while awaiting the culture sensitivity.

A study was conducted on “Candiduria in catheterized intensive care unit patients: emerging microbiological trends” at Department of Microbiology, GB Pant Hospital, New Delhi, India. The study on Urinary tract infection (UTI) as a result of Candida spp. is becoming increasingly common in hospitalized setting. Clinicians face dilemma in differentiating colonization from true infection and whether to treat candiduria or not. The patients admitted in the ICUs and perform microbiological characterization of yeasts to guide treatment protocols. The result of the study Candiduria was more common at extremes of age. The mean duration of catheter days was  $11.1 \pm 6$  days. Concomitant candidemia was seen in 4.3% of cases. Non-albicans Candida spp. (71.4%) emerged as the predominant pathogen causing nosocomial UTI8.

The urinary system is the most common site for all hospital-acquired infections, accounting for approximately 40% of all nosocomial infections. The knowledge of staff nurses regarding prevention of urinary tract infection in patients with indwelling catheter can help patients prevent urinary tract infection. Therefore the researchers were interested to take on the study.

## II. RESEARCH ELABORATIONS

Statement of problem –

“A study to assess the effectiveness of planned teaching programme on knowledge of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter in selected hospital at Udaipur, Rajasthan, India”

## III. OBJECTIVES

1. To assess the pre-test knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter
2. To administer the planned teaching programme on staff nurses to prevention of urinary tract infection among patients with indwelling catheter

3. To assess the post-test knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter
4. To compare pre-test and post-test knowledge score of staff nurses on prevention of urinary tract infection among patients with indwelling catheter

#### IV. HYPOTHESIS

H1 - There will be a significant difference between pre-test knowledge scores and post- test knowledge scores of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter.

#### V. MATERIALS AND METHODS

Population – Staff Nurses

Sample – Staff Nurses working in Geetanjali Hospital, Udaipur

Sample size – 90 staff nurses

Setting – Geetanjali Hospital, Udaipur, Rajasthan, India

Conceptual framework –the conceptual framework for this study was derived from General System Theory. According to General System theory, a system is a set of components or unit interacting with each other within a boundary that filters the kind and rate of flow of inputs and outputs to and from the system.

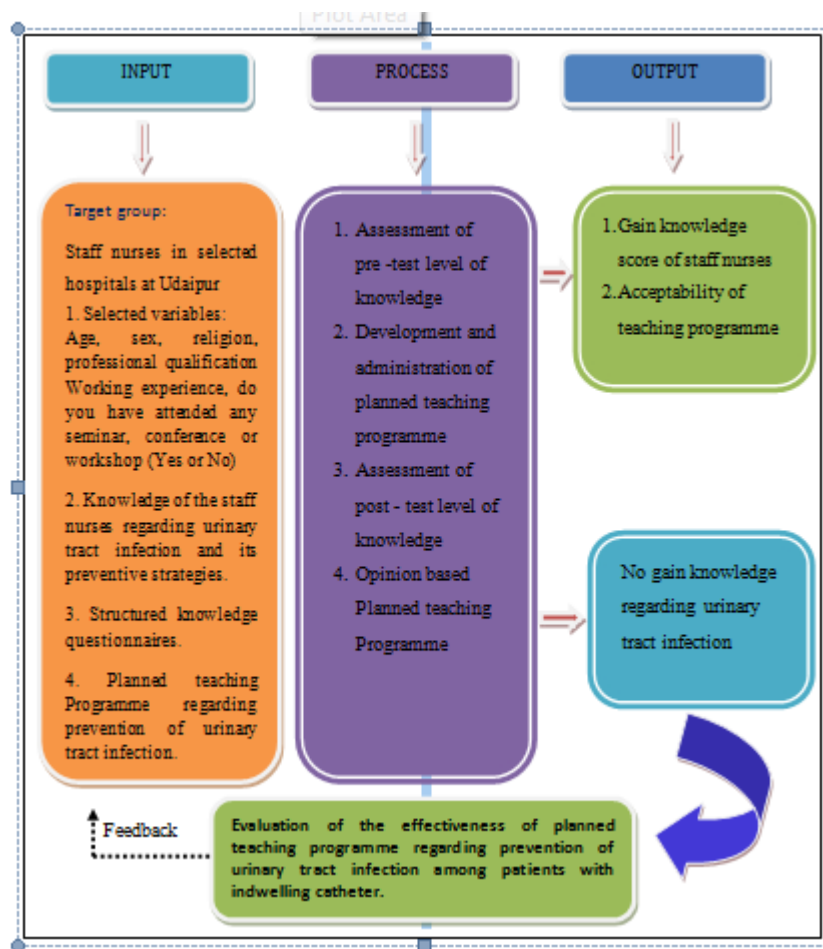


Figure 1 – Conceptual framework

#### VI. RESEARCH DESIGN

The research design selected for the present study was a one group pre-test post-test research design

GROUP	PRE-TEST (Dependent variable)	TREATMENT (Independent variable)	POST –TEST (Dependent variable)
RE	O1	X	O2
RE	Knowledge of Staff Nurses	Planned teaching programme regarding prevention of UTI Among patients with indwelling catheter	Knowledge of Staff Nurses

**Table 1: One group pre and post-test research design**

The interpretations of the symbol are as below:

- RE - Randomized experimental group
- O1 - Administration of pre-test knowledge questionnaire
- O2 - Administration of post-test knowledge questionnaire
- X - Intervention, treatment (independent variable) i.e. PTP.

**Ethical Consideration**

After obtaining permission from research committee of Geetanjali College of Nursing, prior permission was obtained from nursing superintendent Geetanjali medical college and Hospital at Udaipur. Consent was taken from each participant who had participated in the study.

**Description of the Tool**

The structured knowledge questionnaire consisted of two parts i.e. Part – I & II.

Part - I: consisted of 6 items on demographic data such as Age, Gender , Religion, Educational Qualification ,Working Experience, Attended any seminar or workshop related UTIs.

Part - II: consisted of 30 knowledge items. Each item was multiple choices in nature with 4 choices.

**Scoring**

The knowledge of Staff Nurses regarding the outcomes of Urinary Tract Infection was scored as follows, one mark for each correct answer and zero marks for incorrect answer. The maximum score was 30, to interpret level of knowledge the score was distributed as follows;

Interpretation of knowledge:

Level	Range
Inadequate knowledge	<50 %
Moderate knowledge	50-75 %
Adequate knowledge	>75 %

An answer key was prepared for scoring answer to the structured knowledge questionnaire.

**Data Collection and Data Analysis**

The data was presented under the following sections

Section-I: Description of demographic variables of the respondents.

Section-II: Distribution of Respondents according pre-test and post-test level of knowledge score.

Section-III: Effectiveness of planned teaching programme on knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter

**VII. RESULTS**

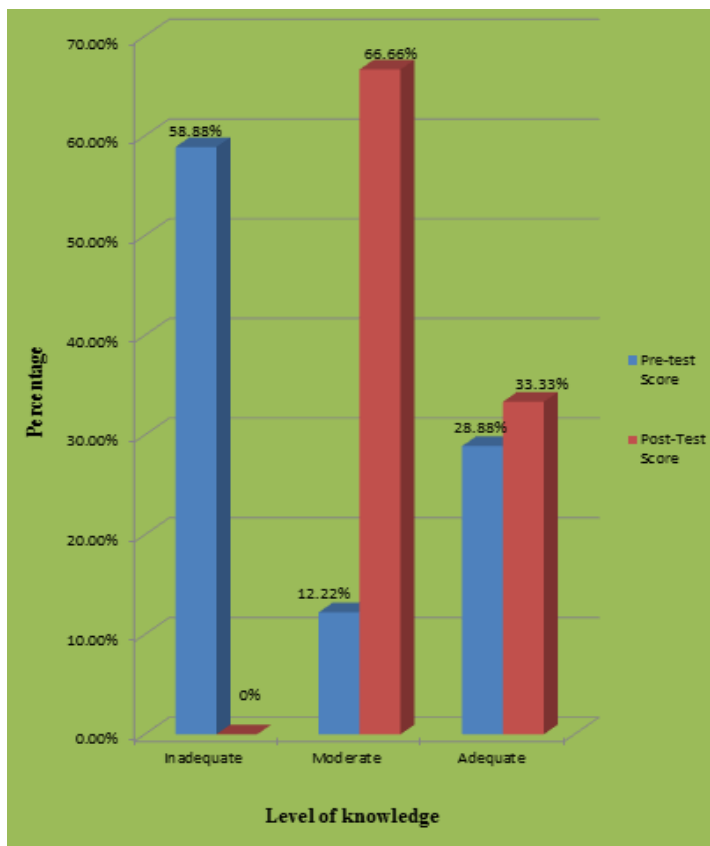
**Table 2: Frequency and Percentage distribution of respondents to their level of knowledge score**

N=90

Level of Knowledge	Score	Respondents			
		Pre-test		Post-test	
		Frequency	Percent (%)	Frequency	Percent (%)
Inadequate knowledge	<50%	53	58.88	0	0
Moderately knowledge	50-75%	11	12.22	60	66.66
Adequate knowledge	>75%	26	28.88	30	33.33
Total		90	100	90	100

Table 2: The result showed that, in pre-test out of 90 respondents 53 respondents (58.88 %) belongs to inadequate knowledge and 11 respondents (12.22%) belongs to moderate knowledge and 26 respondents (28.88%) belongs to adequate knowledge regarding prevention of urinary tract infection among patient with indwelling catheter.

In post-test 60 (66.66%) respondents belongs to moderate knowledge and 30(33.33 %) respondents belongs to adequate knowledge.



**Figure 2: Frequency and Percentage distribution of respondents to their level of knowledge score**

**SECTION: III**

**EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE OF STAFF NURSES ON**

**PREVENTION OF URINARY TRACT INFECTION AMONG PATIENTS WITH INDWELLING CATHETER.**

The paired “t” value was computed to determine the effectiveness of planned teaching programme on knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter.

The following research hypothesis was stated

H1 - There is a significant difference between pre-test knowledge scores and post- test knowledge scores of staff nurses regarding prevention of urinary tract infection among patients with indwelling catheter.

**Table 3: Effectiveness of planned teaching programme on knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter.**

N=90

Knowledge Assessment	Mean	Mean Difference	SD	Df	Paired “t” test	P Value
Pre-test	13.51	8.02	3.70	89	17.06	<0.05
Post-test	21.53		2.74			

Table 3: The result showed that that the mean post-test knowledge score (21.53) was higher than the mean pre-test score (11.13). The mean difference pre-test score (8.02) of knowledge was significant at 0.05 % level at the “t” = 17.06 \*P<0.05. Hence research hypothesis H1 was accepted. This indicates that the PTP was effective in increasing the knowledge of staff nurses on prevention of urinary tract infection among patients with indwelling catheter.

**Table 4: Area wise comparison between pre-test and post-test**

N= 90

Area of Knowledge	Max. Score	Pre-test				Post-test			
		Mean score	Mean %	Range	SD	Mean score	Mean %	Range	SD
Concept and definition of UTI	5	2.66	53.2	4	1.0	3.88	77.77	3	0.72
Causes & risk factor of UTI	5	2.05	41	5	0.92	3.42	68.44	3	0.76
Pathophysiology and Sign & symptoms of UTI	3	1.72	57.33	3	0.87	2.18	72.96	2	0.68
Diagnostic test of UTI	4	1.85	46.25	4	1.06	2.8	70	3	0.83
Management & treatment of UTI	4	1.58	39.5	4	0.99	2.63	65.83	3	0.79

Complications of UTI	1	0.22	22	1	0.41	0.63	63.33	1	0.48
Prevention of UTI	8	3.4	42.5	8	1.38	5.96	74.58	5	1.13

Table 4: The result showed that the mean, standard deviation and percentage of pre-test and post-test knowledge score on different areas of prevention of urinary tract infection.

In the area of Concept and definition of Urinary tract infection in the pre-test knowledge mean score 2.66 and SD 1.0 range 4 in pre-test experimental group and mean value 3.88 and SD 0.72 range 3 in post-test experimental group.

In the area of Causes & risk factor of UTI, the mean score 2.05 and SD 0.92 range 5 in pre-test experimental group and mean score 3.42 and SD 0.76 range 3 in post-test experimental group.

In the area of Pathophysiology and Sign & symptoms of UTI, mean score 1.72 and SD 0.87 range 3 in pre-test experimental group and mean score 2.18 and SD 0.68, range 2 in post-test experimental group.

In the area of Diagnostic test of UTI, mean score 1.85 and SD 1.06 range 4 in pre-test experimental group and mean score 2.8 and SD 0.83 range 3 in post-test experimental group.

In the area of Management & treatment of UTI, mean score 1.58 and SD 0.99 range 4 in pre-test experimental group and mean score 2.63 and SD 0.79 range 3 in post-test experimental group.

In the area of Complications of UTI, mean score 0.22 and SD 0.41 range 1 in pre-test experimental group and mean score 0.63 and SD 0.48 range 1 in post-test experimental group.

In the area of Prevention of UTI, mean score 3.4 and SD 1.38 range 8 in pre-test experimental group and mean score 5.96 and SD 1.13 range 5 in post-test experimental group.

Therefore the results confirmed that the planned teaching program was highly effective in improving the knowledge of staff nurses regarding the prevention of urinary tract infection in patients with indwelling catheters.

### VIII. CONCLUSION

The study aimed at testing the effectiveness of planned teaching program on knowledge of staff nurses regarding prevention of urinary tract infection among patient with indwelling catheters. The result showed that the planned teaching program was highly effective. The implications of this study

emphasize on inclusion of teaching programs on prevention of urinary tract infection in clients with catheters in the hospital continuing education programs, so that the nosocomial infections can be prevented.

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