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Research article

Effectiveness of planned teaching programme on knowledge regarding prevention of urinary tract infection in patients with indwelling catheter

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Abstract

Aim: To assess the pre-test knowledge score on prevention of urinary tract infection in patients with indwelling catheter among staff nurses. To prepare and administer the planned teaching programme on prevention of urinary tract infection in patients with indwelling catheter among staff nurses. To assess the post- test knowledge score of staff nurses on prevention of urinary tract infection in patients with indwelling catheter among staff nurse.
Materials and Methods: The instruments used for the study were knowledge structured questionnaire. A total of 90 staff nurse were selected by using one group pre-test and post-test research design, and purposive sampling techniques may be used.
Results: The finding of the study shows that the mean post-test knowledge score (21.53) was higher than the mean pre-test score (11.13). In addition the mean difference pre-test score (8.02) of knowledge of significant at 0.05% level at the ''t''= 17.06. *p value 0.05. Hence, research hypothesis H1 was accepted. This indicates the planned teaching programme was effective in increasing the knowledge of staff nurses on the prevention of UTIs among patient with an indwelling catheter.
Conclusion: This study showed improves the knowledge of staff nurses prevention of urinary tract infection among patients with an indwelling catheter.

Keywords: Urinary tract infection, catheter-associated urinary tract infection, planned teaching programme.

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1. Introduction

The urinary system is the most common site for all hospital-acquired infection. Accounting for approximately 40% of all nosocomial infection. The United State center for Medicare and Medicaid services has enacted 2 policies that have focused considerable attention on the optimal use of the indwelling catheter in the acute and long-term care setting and the prevention of complication during catheter-associated urinary tract infection.[1]

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UTI is one of the most infectious diseases seen in the community worldwide. Empirical antibiotic therapy is usually applied here and for this, knowledge of the common uropathogens and their susceptibility to commonly used antibiotic needed.

Treatment becomes more challenging in the presence of risk factors such as higher age, morbidity, and immunosuppressant. Many times, physician resort to prescribing broad-spectrum antibiotics over specific antibiotics in the view of resistance of the causative organism to the antibiotics. Poor patient compliance and incomplete course of antibiotics have resulted in the evaluation of resistance to many of these antibiotics. [2]

Urinary tract infection remains a significant cause of morbidity in all age group. Recent studies have helped to better define the population group at risk for this infection as well as the most cost-effective management strategies, initially, a urinary tract infection should be categorized as complicated or uncomplicated.[3]

Urinary tract infection usually refers to the presence of bacteria in the urinary tract together with symptoms and some time signs of inflammation. It is characterized by a frequency of micturition, dysuria, pyuria, nocturia, fever, occasional suprapubic pain, and hematuria. UTI is one of the most commonly occurring bacterial infections among man and women. The infection is a problem of all ages, although its prevalence various markedly. The highest incidence mostly occurs in healthy young women who present with symptoms of acute uncomplicated bacterial cystitis or pyelonephritis.[4]

UTI are among the most common infectious disease occurring in either the community or health a care setting. Uncomplicated UTIs typically occur in the healthy adult non-pregnant women, while complicated UTIs may occur in all sex and age group are frequently associated with either structural or functional urinary tract abnormalities.[5]

Objective:

1. To assess the pre-test knowledge score on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

2. To prepare and administer the planned teaching programme on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

3. To assess the post test knowledge score of staff nurses on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

4. To find out the effectiveness of planned teaching programme on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

5. To find out the association between pre-test knowledge score and selected demographic variables.

2. Material and methods

An evaluate experimental research approach was considered appropriate for the present study, The objective of the study was to evaluate the effectiveness of a planned teaching programme on prevention of urinary tract infection among patients with an indwelling catheter.

One group pre-test post-test research design was used in the current study assessed the effectiveness of planned teaching programme knowledge regarding prevention of urinary tract infection in patients with an indwelling catheter. The present study was conducted in Geetanjali Hospital, manwa khera, and Udaipur. This multispecialty hospital covers 1100 beds with different specialty ward. The population for the present study comprised staff nurses working in Geetanjali hospital at Udaipur. A sample size for the final study consisted 90 staff nurses in the experimental group. Ethical consideration was taken from the research committee of Geetanjali College of nursing. Prior permission was obtained from nursing superintended, Geetanjali Medical College and Hospital at Udaipur. Consent was taken from each participant who had participated in the study.

A structured self–administered questionnaire was selected based on the objective of the study as it was considered the based and appropriate instrument to elicit the response from the literate subject.

Period of data collection extended from 7/11/ 2017 to 14/ 11/2017 and permission was obtained from the head of the institution prior to the data collection. Pre-test assessment on selected representative by structured knowledge questionnaire of knowledge on prevention of urinary tract infection among patients with an indwelling catheter. Soon after which the planned teaching programme followed it on prevention of urinary tract infection among patients with an indwelling catheter to all pre-tested candidates. After which the post-test assessment was done on selected representative by structured knowledge questionnaire prevention of urinary tract infection among patients with an indwelling catheter after the planned teaching programme.

The knowledge of staff nurses regarding the outcome of urinary tract infection was scored as followed,

Level	Range %
Adequate knowledge	50
Moderate knowledge	50-75
Adequate knowledge	75

Table 1: Distribution of respondents according to age in years N = 90

Demographic variables	Category	Frequency	Presents
Age group	21-25 year	71	78.88
	26-30 year	13	14.44
	31-35 year	05	5.55
	Above 35 year	01	1.11
	Total	90	100

Table 1: Depicts the majority of respondents in experimental group 71 (78.88%) respondent belongs to the age group of 21-25 year, 13 (14.44%) respondents belongs to the age group of 26-30 year, 05 (5.55%) respondents belongs the age group of 31-35 year and 01 (1.11%) respondents belong to the age group of above 35 year.

Table 2: Distribution of respondents by gender N= 90

Demographic variable	Category	Frequency	Presents
According to gender	Male	55	61.11
	Female	35	38.88
	Total	90	100

Table 2: Depicts that majority of the respondents 61.11% were male and 38.88% respondents were female.

Table 3: Distribution of respondents according to working experience N: 90

Demographic variable	Category	Frequency	Percentage
Working experience	0-1 year	72	80.00
	1-3 year	11	12.22
	3-5 year	04	4.44
	Above 5 year	03	3.33
	Total	90	100

Table 3: Depicts that majority of the respondent in experimental group 71 (80.00%) respondents belonged to 0-1 year experience, 11 (12.22%) respondents belonged to 1-3 year experience, 04 (4.44%) respondents belonged to 3-5 year experience, 03 (3.33%) respondents belonged to above 5 year experience.

Table 4: Distribution of respondents according to qualification N: 90

Demographic variable	Category	Frequency	%
Professional qualification	GNM	70	77.77
	PB BSC	12	13.33
	BSC	08	8.90
	MSC	0	0
	Total	40	100

Table 4: Depicts the majority of respondents in experimental group 70 (77.77%) respondents belongs to GNM, 12 (13.33%) respondents belongs to PBBSC, 8 (8.90%) respondents belong to BSC nursing, 0 (0%) respondents belong to MSC nursing.

Table 5: Distribution of respondents according to attended any seminar, workshop, conference regarding prevention of urinary tract infection: N = 90

Demographic variable	Category	Frequency	Percent
According To Attended Any Seminar, Workshop, And Conference	Yes	18	20
	No	72	80
	Total	90	

Table 5: Depicts the majority of respondents in experimental group 18 (20%) respondents belong to attended and 72 (80%) respondents did not attend any seminar workshop and conference regarding prevention of urinary tract infection.

Table 6: Frequency and percentage distribution of respondents to their level of knowledge score N = 90

Level of Knowledge	Score	Percentage			
		Pre-test		Posttest	
		Freq	%	Freq	%
Inadequate knowledge	Below 50	53	58.88	0	0
Moderate knowledge	50-75	11	12.22	60	66.66
Adequate knowledge	Above 75	26	28.88	30	33.33
Total		90	100	90	100

Table 6: The result shows 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 UTI in patients with an indwelling catheter. In the post-test 60(66.66%) belongs to moderate knowledge, 30(33.33%) belongs to adequate knowledge.

Table 7: Effectiveness of planned teaching programme on knowledge regarding the prevention of urinary tract infection in patients with indwelling catheter among staff nurses. 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 7: The result shows that the mean pre-test knowledge score (21.55) was higher than the mean pre-test (11.13). The mean pre-test score (8.02) of knowledge was significance at 0.05% % level at the ''t" = 17.06* p<0.05. Hence, the research hypothesis was accepted. This indicates that the PTP was effective in increasing the regarding prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

Table 8: Compression between pre-test and post-test N: 90

Area of knowledge	Score	Pre-test				Post-test			
		Mean score	Mean %	Range	SD	Mean score	Mean %	Range	SD
Concept and definition of urinary tract infection	5	2.66	53.2	4	1.0	3.88	77.77	3	0.72
Cause and risk factor of urinary tract infection	5	2.05	41	5	0.92	3.42	68.44	3	0.76
Pathophysiology and sign and symptom of urinary tract infection	3	1.72	57.33	3	o.87	2.18	72.96	2	0.76
The diagnostic test of urinary tract infection	4	1.85	46.25	4	1.06	2.8	70	3	0.83
Management of treatment of urinary tract infection	4	1.58	39.5	4	0.99	2.63	65.83	3	0.79
Complication of urinary tract infection	1	0.22	22	1	0.41	0.63	63.33	1	0.48
Prevention of urinary tract infection	8	3.4	42.5	8	1.38	5.96	74.58	5	1.13

Table 8: The result shows that the mean, standard deviation, and percentage of pre-test and post-test knowledge score on prevention of urinary tract infection (UTI)

- In the area of concepts and definition of urinary tract infection (UTI) in pre-test knowledge mean score 2.66 and SD 1.0 range 4 in pretest experimental group and mean valve 3.88 and SD 0.72 range 3 in the post-test experimental group.
- In the other area of cause and risk factor of urinary tract infection (UTI), the mean score 3.42 and SD 2.05 and range 5, in the post-test experimental group and mean score 3.42 and SD 0.76, range 3 in the post-test experimental group.
- In the area of pathophysiology and sign and symptom of urinary tract infection (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 the post-test experimental group.
- In the area of diagnostic of urinary tract infection (UTI), mean score1.85and SD 1.06 range 4 in pre-test experimental group and mean score of 2.8 and SD 0.83 range 3, post-test experimental group.
- In the area of management and treatment of urinary tract infection (UTI), mean score 1.58 and SD 0.99 range 4 in pre-test experimental group, mean score 2.63 and SD 0.79 range 3 in the post-test experimental group.

In the area of a complication of urinary tract infection (UTI), mean score of 0.22 and SD 0.41 range 1 in pre-test experimental group, mean score 0.63 and SD 0.48 range 1 in the post-test experimental group.

In the area of prevention of urinary tract infection (UTI), mean score 3.4 and SD 1.38 range 8 in pre-test experimental group, mean score of 5.96 and SD 1.13 range 5 in the post-test experimental group.

4. Discussion

The present study conducted to assess the effectiveness of planned teaching programme on knowledge regarding prevention of UIT in patients with indwelling catheter among staff nurses in selected hospital at Udaipur city.

Section 1: Description of the demographic variable of the staff.

Section 2: knowledge on prevention of urinary tract infection among patients with indwelling catheter among staff nurses in the pre-test.

Section 3: Knowledge of prevention of urinary tract infection among patients with indwelling catheter among staff nurses in post-test.

Section 4: comparison pre-test and post-test knowledge score on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

Section 1: Description of the Demographic variable of the staff nurses.

Age in the year: The majority of respondents in experimental group 71(78.88%) respondents age group belongs to 21-25 year, 13(14.44%) respondents age group belongs to 26-30, 05 (5.55%)
Respondents' age group to 31-35 year, 1 (1.11%) respondents belongs to the age group of Above 35 year.

Gender: The majority of respondents age group of 55 (61.11%) respondents belongs to male and 35 (38.88%) respondents belong to Female.

Professional qualification: The majority of respondents in experimental group 70 (77.77%) respondents belongs to GNM, 12 (13.33%) respondents belong to PBBSC, 08 (8.88%) respondents belongs to BSC, 0 (0%) no respondents.

Working experience: The majority of respondents in experimental group 72(80%) respondents belongs to 0–1 year experience, 11 (12.22%) respondents belongs to 1–3 year experience, 04 (4.44%) respondents belongs to 3–5 year experience, 03 (3.33%) respondents belongs to above 5 year experience.

Attended any workshop and seminar: The majority of respondents in experimental group 18 (20%) respondents belongs to the attended seminar, 72 (80%) respondents belong to the attended seminar.

Section 2: To assess the knowledge on prevention of urinary tract infection in patients with indwelling catheter among staff nurses.

The level of knowledge on prevention of urinary tract infection in patient with indwelling catheter among staff nurse in pre-test out of 90 respondents 53(58.88%) had inadequate knowledge, 11(12.22%) had moderate knowledge, 26 (28.88%) staff nurse had adequate knowledge on prevention of urinary tract infection in patient with indwelling catheter.

Section 3: To assess the knowledge on prevention of urinary tract infection in patients with indwelling catheter among staff nurses in post-test.

The level of knowledge on prevention of urinary tract infection in a patient with indwelling catheter among staff nurse in post-test out of 90 respondents 0(0%) had urinary tract infection in patients with indwelling catheter among staff nurses.

The present study means a score of post-test knowledge (21.53) was apparently higher than the mean score of pre-test knowledge (13.51), suggesting the planned teaching programme was effective in increasing knowledge of the staff nurses regarding prevention of urinary tract infection in patients with an indwelling catheter.

Conclusion

The pretest study was done to assess the effectiveness of planned teaching programme on knowledge regarding the prevention of urinary tract infection in patients with indwelling catheter among staff nurses. During pre-test, most of the staff nurses show that the inadequate knowledge and the maximum number of respondents have moderate knowledge of post-test. There has been a significant improvement in the level of knowledge of nurses which indicated the planned teaching programme was effective.

Recommendations

- A similar study can be conducted in various clinical settings to find out the knowledge regarding prevention of urinary tract infection in patients with an indwelling catheter [6, 7].
- The nurses, doctors, family members play a major role in preventing the nosocomial infection to a patient with iatrogenic substance.[8]

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