International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 8 Issue 5, Sep-Oct 2024 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Cauti Prevention Bundle among Nursing Officer in Selected Hospital of Kanpur, Uttar Pradesh

Aman Kashyap[1], Anjali Saini[2], Divya Laxmi Nair[3], Komal Pal[4], Sheetal[5], Vikas Kumawat[6]

[1,2,3,4,5]BSc Nursing Student, [6]Assistant Professor,
[1,2,3,4,5,6]Regency Institute of Nursing, Kanpur, Uttar Pradesh, India

ABSTRACT

CAUTI care bundle is a group of interventions related to prevention of catheter associated urinary tract infection that when implemented together give better outcome than when implemented. According to a study "CAUTI is the most common HAI globally". Keeping this in view the investigator conducted "A study to assess the effectiveness of structured teaching programme on knowledge regarding CAUTI prevention bundle among nurses of selected hospital of Kanpur, U.P". The objective of the study are: To assess the existing knowledge of nurses regarding CAUTI prevention bundle. To assess the posttest knowledge of nurses regarding CAUTI prevention bundle. To evaluate the effectiveness of structured teaching programme on CAUTI prevention bundle. To find out the association between post-test knowledge and socio demographic variables. Hypothesis H01 - There is no significant difference between pre and post-test knowledge score regarding CAUTI prevention bundle among nurses H02 - There is no significant association between post-test knowledge score with their selected socio demographic variables. Research hypothesis H1 - There is a significant difference between pre and post-test knowledge score regarding CAUTI prevention bundle among nurses. H2 - There is a significance association between post-test knowledge score with their selected socio demographic variables. Evaluation Approach was adopted; along with pre-experimental (one group pre-test post-test) research design was used. The Non-probability convenient sampling technique was used to select the 40 adult nurses. Data was collected from selected hospital of Kanpur, Uttar Pradesh by self-reporting method with the socio- demographic data of nurses along with structured tool made by researcher (structured knowledge questionnaire) was used to collect the data. As data was analyzed by using descriptive and inferential statistics. Study revealed that In pre-test, out of 40 nurses 18(45%) had poor knowledge, 22(55%) had average knowledge and none of nurses had good knowledge. In post-test, out of 40 nurses 5(12.5%) had poor knowledge, 19(47.5%) had average knowledge and 16(40%) had good knowledge.) Enhancement was computed by using paired "t" test at 0.05 level of significance, it was found to be 5.88 in knowledge, indicating that there is a significant improvement in the knowledge of nursing officer.

How to cite this paper: Aman Kashyap | Anjali Saini | Divya Laxmi Nair | Komal Pal | Sheetal | Vikas Kumawat "A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Cauti Prevention Bundle among Nursing Officer in Selected Hospital of Kanpur, Uttar Pradesh" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-8 | Issue-5, October 2024, pp.107-112, URL: www.ijtsrd.com/papers/ijtsrd69330.pdf

IJTSRD69330

KEYWORDS: *STP, Knowledge, Cauti Prevention Bundle, Nursing Officer Kanpur*

INTRODUCTION

Urinary tract infections (UTIs) are among the most common microbial infections in humans and represent a substantial burden on the health care system. UTIs can be uncomplicated, as when affecting healthy individuals, or complicated, when affecting individuals with compromised urodynamic

and/or host defenses, such as those with a urinary catheter.

According to the US Centre for Disease Control and Prevention (CDC), CAUTI are defined by a positive urine culture (bacteriuria) together with at least one symptom. The use of invasive devices, such as urinary catheters, central lines and ventilators, is associated with a high frequency of HAI. Since urinary catheters are the most commonly used medical device in the world, catheter associated urinary tract infections (CAUTI) are among the most frequent HAI, with more than 150 million cases/year. Risk factors for CAUTI include older age, female gender, diabetes mellitus, and extended duration of catheterization. Many CAUTI are attributable to contamination of the catheter, either during insertion or during use, when the drainage system may serve as a source of contamination.

Catheter-associated urinary tract infections (CAUTI) are among the most common device- associated infections, which account for nearly 26% of all health care–associated infections (HAI). CAUTI occur when bacteria enter the body through an indwelling urinary catheter that is inserted into the bladder for purpose of draining urine. CAUTI are associated with negative sequelae, including increased length of hospital stay, excess cost, morbidity, and mortality, leading to more than 8,000 deaths annually.

Urinary drainage systems are often reservoirs of infection in patients, thus effective prevention of CAUTI requires an evidence-based approach. The CAUTI incidence in the neurosurgery units of the hospital was 1.86–2.69% urinary catheter days, which ranked as medium when compared to the entire hospital.

Indwelling or intermittent urinary catheter use can result in bacteriuria which may signify either colonisation (catheter-associated asymptomatic bacteriuria) or symptomatic infection (catheter-associated urinary tract infections (CAUTIs).

The most important risk factor for urinary tract infections in a hospital is the temporary use of a indwelling urinary catheter. Patients admitted to intensive care units tend to have a higher use of indwelling urinary catheters than patients admitted to general wards (83% vs 21%, in one study), they are at higher risk for developing CAUTI.

CAUTI risk increases considerably with duration of catheterization, and generates substantial care burden and significant hospitalization costs, patient distress, embarrassment, discomfort, pain and activity restrictions.

Need for the study

About 17–69% of CAUTIs can be prevented if CDC-recommended infection control measures are in place. Educating and training the healthcare personnel and implementing practices for prevention of CAUTI contribute greatly to reduce the incidence of CAUTI. Limited studies have assessed the impact of care practices on reduction of the infections once catheter is inserted. But currently there is no defined infection control policy or guideline in India and the need of the hour is implementation of evidence-based infection control practices. So, this study was conducted to evaluate the impact of the catheter care bundle in reducing CAUTI incidence in our set-up. In India, the incidence of CAUTI varies between regions and hospitals, with intensive care unit (ICU) rates of 4.4 CAUTI/1000 catheter days and ward rates of 18 CAUTI/1000 catheter days having been reported15.

The most commonly employed diagnostic criteria for such diagnosis come from the Infectious Disease Society of America (IDSA) and Centres for Disease Control and Prevention (CDC) National Health Safety Network (NHSN) surveillance definition. The latest from IDSA for the diagnosis of CAUTI came in 2010 and CDC NHSN surveillance definition was updated in 2017, as represented below16.

STATEMENT OF THE PROBLEM

"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CAUTI PREVENTION BUNDLE AMONG NURSING OFFICER IN SELECTED HOSPITAL OF KANPUR, U.P"

OBJECTIVE OF THE STUDY

1. To assess the existing knowledge of nurses regarding CAUTI prevention bundle.
2. To assess the post-test knowledge of nurses regarding CAUTI prevention bundle
3. To evaluate the effectiveness of structured teaching programme on CAUTI prevention bundle.
4. To compare pre –test and post-test knowledge regarding prevention from CAUTI among nurses.
5. To find out the association between post-test knowledge and socio demographic variables.

ASSUMPTION/ HYPOTHESIS

1. Nurses may have some knowledge regarding CAUTI prevention bundle.
2. Nurses may have interest to learn more about CAUTI prevention bundle.
3. Knowledge of nurses can be measured through structured questionnaires.

Hypothesis

Null hypothesis (at the level of 0.05)

H01 - There is no significant difference between pre and post-test knowledge score regarding CAUTIprevention bundle among nurses

H02 - There is no significant association between post-test knowledge score with their selected socio demographic variables.

Research hypothesis (at the level of 0.05)

H1 - There is a significant difference between pre and post-test knowledge score regarding CAUTI preventionbundle among nurses

H2 - There is a significance association between post-test knowledge score with their selected socio demographic variables.

OPERATIONAL DEFINITIONS:

An operational definition provides enough detail to allow anyone to understand exactly what is meant by aparticular term or concept in the context of a study.

Evaluate- It refers to the level of knowledge regarding CAUTI prevention bundle among nurses, based on arbitrarily set criteria.

1. **Effectiveness-** It refers to a significant improvement in knowledge & practice of nurses after the structured teaching program on knowledge regarding CAUTI prevention bundle.
2. **Knowledge-** It refers to the ability of nursing officers to respond to the knowledge-based questions related to CAUTI prevention bundle correctly as evident from the knowledge score measured by the structured knowledge questionnaire.
3. **Structured teaching program-** It refers to the systematically organized teaching program for giving teaching prepared by the investigator to increase knowledge among nurses CAUTI prevention bundle.
4. **CAUTI –** CAUTI stands for catheter associated urinary tract infection

DELIMITATION

1. The study is limited to selected hospital of Kanpur.
2. A sample of only 40 nurses can be from the selected hospital of Kanpur
3. Nurses, those are available at the time of data collection.
4. Nurses, who have qualifications from a recognized university of at least General nursing midwifery

Methodology

Research approach:- quantitative approach

Research design:- one group pretest post test design

Setting of the study:- The study was conducted at Regency hospital of Kanpur, UP. The samples were selected using Non- Probability Convenient sampling technique.

Population:- It represents the entire group understudy.

Target population The target population of the present study includes nurses of age group 20 to 35 in selected hospital of Kanpur, U.P

Accessible population The accessible population of the present study includes the nurses who meet the inclusion criteria in selectedhospital of Kanpur, U.P.

Sample The sample selected for the study comprised of 40 nurses of Regency hospital of Kanpur, U.P.

Sampling technique Convenient sampling technique was found appropriate to select 40 nurses from the selected hospital ofKanpur, U.P. for the study.

SAMPLE SELECTION CRITERIA

Inclusion Criteria

The study includes –

1. Nurses available at the time of data collection.
2. Nurses who are willing to be a part of study.
3. Nurses in selected hospital of Kanpur, Uttar Pradesh.

Nurses who have qualifications from a recognized university of at least General nursing midwifery.

Exclusion criteria This study includes -

1. Nurses who are out of Kanpur, Uttar Pradesh.
2. Nurses who are not willing to participate.
3. Nurses not working in the specific hospital setting.

VARIABLES

Research variables are concepts at various levels of abstraction that are measured, manipulated and controlled in the study. Three types of variables were identified in this study. They were

1. Independent variables
2. Dependent variables.
3. Extraneous variables.

INDEPENDENT VARIABLE

In the present study, structured teaching programme on CAUTI prevention bundle will be the independent variable.

DEPENDENT VARIABLE

Knowledge of nurses on CAUTI prevention bundle is the dependent variables in this study.

EXTRANEOUS VARIABLE

In the current study it points out to the selected demographic variables such as age, gender, educational status, experience and Source of information about CAUTI prevention.

DESCRIPTION OF THE TOOL

This tool (Structured knowledge questionnaire) is designed to collect relevant information from nurses regarding their knowledge regarding CAUTI prevention bundle and to assess the effectiveness of structuredteaching programme.

The tool consists of structured knowledge questionnaire with three sections part I, Part II and Part III as follows:

Section A: Socio-demographic variables. **Section B:** Knowledge questionnaire.

- **Section A:**

Demographic data consisting of 6 items seeking information about the baseline data such as age,gender,educational status, experience, source of information.

- **Section B:**

Consisted 26 items in general information about CAUTI prevention bundle like urinary tract infection, catheter associated urinary tract infection, CAUTI prevention bundle. A score of one was given for correctanswer and zero for wrong answers. Thus the maximum score was 26 and the minimum score was zero. The scoring was just done by counting the correct responses and according to the total score obtained.

The questionnaire consists of 26 multiple choice questions. Each item had 4 choices out of which one wascorrect answer and the remaining 3 were wrong answers. A score value of 1 was allotted to each correct response and for wrong response zero was awarded. Thus there were 26 maximum obtainable scores. The level of Knowledge was categorized based on percentage of scores obtained.

VALIDATION OF TOOLS

According to Juraci A César, 2002;

The tool will be submitting to 4 experts were nurse educator from the department of medical surgical nursing. The experts were requested to give their opinions and suggestions regarding the relevance, adequacy and appropriateness of the items included.

Ethical clearance:

Prior permission was obtained from the concerned authority, i.e. Principal, of the Regency Institute of

Nursing, Kanpur, U.P. Keeping in mind the ethical aspect of the research, data were collected after obtaining informed consent by the respondents, and were assured of the anonymity and confidentiality of the information provided by them.

RELIABILITY OF TOOLS

To establish the reliability, the questionnaire was administered to 6 samples other than the studysample. Split half method was used to estimate homogeneity. The scores of the items were first divided into two equal halves with odd and even numbers of questions and correlations were found using Karl- Pearson's correlation coefficient formula. The correlation of the half test was found to be significantr1/2= 0.719.

The reliability coefficient of the whole test was then estimated by Spearman- Brown Prophecy formula. The tool was found reliable r = 0 .83.

PROCEDURE FOR DATA COLLECTION

The research investigator met the head of the institution in order to establish support and cooperation to conduct the study successfully. The formal permission was taken from the authorities of selected hospital of Kanpur, U.P. Study was conducted from 3 July 2023 to 15th July 2023.

The method used for data collection was as follows;

1. The research investigator introduced him to the subjects and established the good rapport with them.
2. The written consent was obtained from each participant.
3. Appropriate orientation was given to the subjects about the aim of the study, nature of the questionnaire and adequate care was taken for protecting the subjects from potential risk including maintaining confidentiality, security and identity.
4. Non-Probability convenient sampling technique was used.
5. The socio demographic variables collected from the subjects. The pre-test was done to assess the subject's knowledge through structured questionnaire.
6. The Structured teaching programme was administered to all the subjects at the end of the pre-test.
7. The post-test of the study was carried out 7 days later, using the same tool as the pre-test.
8. Data collected was then tabulated and analyzed.

ANALYSIS AND INTERPRETATIONS OF DATA

Section 1: Distribution of subjects according to socio demographical Variables; demographical profile (n=40)

Table 2: Demographic variables of the respondent and the result

S. No.	Demographic Variables	Frequency	Percentage
1	**AGE**		
	20-25	16	40%
	26-30	14	35%
	31-35	10	25%
2	**GENDER**		
	Male	15	38%
	Female	25	63%
3	**EDUCATIONAL STATUS**		
	GNM	26	65%
	B. Sc Nursing	14	35%
4	**EXPERIENCE**		
	Below 2 yrs.	16	40%
	In between 2 to 5 yrs.	14	35%
	In between 5 to 10 yrs.	10	25%
5	**SOURCE OF INFORMATION**		
	While studying	2	5%
	During clinical duty	19	48%
	From an article, research or book	8	20%
	Others	11	28%

SECTION-2 :-
ASSESSMENT OF THE PRE-TEST LEVEL OF KNOWLEDGE OF NURSESREGARDINGCAUTI PREVENTION BUNDLE

TABLE 3: Pre-test knowledge score nurses regarding CAUTI prevention bundle.

Level of knowledge	Grading	No. of. sample	Percentage
Inadequate	<12	18	45%
Moderate Adequate	13 – 20	22	55%
Adequate	21-26	0	0%
Total	26	40	100%

SECTION-3 ASSESSMENT OF THE POST-TEST KNOWLEDGE OF NURSES REGARDING CAUTI PREVENTION BUNDLE

Table 4: Post Test Level of Knowledge Score of Nurses Regarding CAUTI prevention bundle.

Level of knowledge	Grading	No. of. sample	Percentage
Inadequate	<12	5	12.5%
ModerateAdequate	13 – 20	19	47.5%
Adequate	21-26	16	40%
Total	26	40	100%

OBJECTIVE-3: To evaluate the effectiveness of the structured teaching program regarding CAUTI prevention bundle

TABLE 5: COMPARISON BETWEEN PRETEST AND POST TEST LEVELS OF KNOWLEDGE AMONG NURSES REGARDING CAUTI PREVENTION BUNDLE. (N= 40)

Level of Knowledge	Grading	No. of study participants.		Percentage of frequency	
		Pre-Test	Post Test	Pre-Test	Post Test
Inadequate	<12	18	5	45%	12.5%
Moderate Adequate	13-20	22	19	55%	47.5%
Adequate	21-26	0	16	0%	40%
TOTAL	26	40	40	100%	100%

The above table no. 5 shows the comparison of knowledge on CAUTI prevention bundle before & after the structured teaching programme. In every aspect, nurses upgraded their insight after an organized structured teaching program. Subjects grabbed the greatest information in introduction with the level of 81% and least

knowledge on catheter associated urinary tract infection with 67 %. When all is said and done22% of information is the net advantage of this examination, which demonstrates the adequacy of an organized educating program. The difference between pre-test and post knowledge was calculated by usingstudent paired t-test and the value is t=5.88% with the degree of freedom df =39 at p<0.05 level of significance. So statistically the obtained value t=5.88 is found to be significant at 0.05, so null hypothesisH01 is rejected and automatically research hypothesis H1 is accepted. So we can say statistically there is a significant difference between the pre and post-test Knowledge scores of nurses in regards to CAUTI prevention bundle.

Association between post-test knowledge with their selected demographic variable

Objective-5: To find out the association between the post-test knowledge with their selected socio-demographic variables.

TABLE 6: ASSOCIATION BETWEEN POST TEST KNOWLEDGE REGARDING CAUTI PREVENTION BUNDLE AMONG NURSES WITH THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES (N=40)

S. No.	Demographic Variables		Post-test level of knowledge			calculated $\chi 2$ value	df
			Poor	Average	Good		
1	Age	20-25	3	6	7	0.65(NS)	4
		26-30	2	6	6		
		31-35	1	5	4		
2	Gender	Male	2	6	7	0.24(NS)	2
		Female	4	11	10		
3	Educational Status	GNM	4	11	11	0.24(NS)	2
		BSc Nursing	2	6	6		
4	Experience	Below 2Yrs.	3	6	7	0.67(NS)	4
		In Between 2 to 5 Yrs.	2	6	6		
		In Between 5 to 10 Yrs.	1	5	4		
5	Source of Information	WhileStudying	0	0	2	5.47(NS)	6
		During Clinical Duty	4	8	7		
		From an Article, Research orBook	0	5	3		
		Others	2	4	5s		

Null Hypothesis

H04: There is no significant association between the selected socio-demographic variables (age, gender, educational status, experience, source of information) with posttest knowledge of nurses regarding CAUTI prevention bundle.

Research Hypothesis

H4: There is a significant association between the selected socio demographic variables (age, gender, educational status, experience, source of information with posttest knowledge of nurses regarding CAUTI prevention bundle. Table no 6 demonstrates the association between the selected socio demographic variables. There is no significant association between the selected socio-demographic variables (age, gender, educational status,, experience, source of information) with the posttest Knowledge of adult peopleregardingover the counter drugs, so, research hypothesis H4 is rejected and naturally, null hypothesis H04 is accepted.So we can state statistically there is no significance association between post-test knowledge score with their selected socio demographic variable.

CONCLUSION

The findings of this study support the need for nurses to understand regarding the various aspects of CAUTI prevention bundle. The study has proved that the nurses have a remarkable increase in the knowledge regarding CAUTI prevention bundle when compared to their previous knowledge, prior to the implementation of the STP. Thus, for the future outlook there is a need to improve their knowledge by conducting STP and demonstration programme on CAUTI prevention bundle.