

Original Research Article

Adoption of Guidelines on Knowledge and Practice Regarding Care of Urinary Catheter in Situ among Staff Nurses

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ABSTRACT

A urinary tract infection is an infection that involves any of the organs or structures of the urinary tract, including the kidneys, ureters, bladder, and urethra. UTIs are the most common type of healthcare associated infection and are most often caused by the placement or presence of a catheter in the urinary tract. CAUTIs have been associated with increased morbidity, mortality, healthcare costs, and length of stay. The risk of CAUTI can be reduced by ensuring that catheters are used only when needed and removed as soon as possible. A pre experimental study design was applied to assess adoption of guidelines on knowledge and practice regarding care of urinary catheter in situ among staff nurses at S.G.R.D. Hospital, Amritsar. 60 staff nurses working in ICU, Surgical Ward and Gynaecology Ward were selected by using convenient sampling technique. The data was collected by structured knowledge questionnaire and checklist related to care of urinary catheter in situ. The obtained data was analyzed by using descriptive and inferential statistics. The findings of the results show that in pre test 34 (56.7 %) had moderate knowledge, 19 (31.7 %) had inadequate knowledge and 07 (11.6 %) had adequate knowledge. In pre test practice 37 (61.7 %) had moderate practice, 15 (25.0 %) had inadequate practice and 08 (13.3 %) had adequate practice. In post test knowledge 34 (56.7 %) had moderate knowledge, 23 (38.3%) had adequate knowledge and 03 (5.0%) had inadequate knowledge. In post test practice 30 (50.0 %) had moderate practice, 22 (36.7 %) had adequate practice and 08 (13.3%) had inadequate practice. Effectiveness of guidelines on pre-test and post-test knowledge score was tested by using paired 't' test value was - 7.875 with 'p' value .000 (< 0.01 level of significance). Effectiveness of guidelines on pre-test and post-test practice score was tested by using paired 't' test value was -6.825 with 'p' value .000 (< 0.01 level of significance). Catheter restriction protocols have been a common component of successful multi-modal interventions to decrease catheter use and CAUTI rates, including hospital-wide interventions such as the emergency department, inpatient units (including general medical, surgical wards and ICU), and in the periprocedural setting.

Key words: Urinary Catheter, Adoption of guidelines, knowledge, Practice.

INTRODUCTION

A urinary tract infection (UTI) is an infection that involves any of the organs or structures of the urinary tract, including the kidneys, ureters, bladder, and urethra. Some of the common symptoms of a urinary tract infection are burning or pain in the lower abdomen (that is, below the stomach), fever,

burning during urination, or an increase in the frequency of urination. UTIs are the most common type of health care associated infection (HAI) and are most often caused by the placement or presence of a catheter in the urinary tract. ^[1]

A catheter-associated urinary tract infection (CAUTI) occurs when germs

(usually bacteria) enter the urinary tract through the urinary catheter and cause infection. CAUTIs have been associated with increased morbidity, mortality, healthcare costs, and length of stay. The risk of CAUTI can be reduced by ensuring that catheters are used only when needed and removed as soon as possible; that catheters are placed using proper aseptic technique; and that the closed sterile drainage system is maintained. [2]

According to the latest CDC National and State HAI Progress Report, in 2013, acute care hospitals experienced a 6% increase in catheter-associated urinary tract infections compared to 2009. An estimated 13,000 deaths (mortality rate 2.3%) are attributed to UTIs annually in the United States. In January 2012, the Centers for Medicare and Medicaid Services (CMS) began requiring acute care hospitals participating in their Hospital Inpatient Quality Reporting Program to report CAUTIs in adult and pediatric intensive (critical) care units. In January 2015, CMS began requiring acute care hospitals to report CAUTIs in adult and pediatric medical, surgical, and medical/surgical inpatient wards. [3]

UTIs are the most common type of healthcare-associated infection reported to the National Healthcare Safety Network (NHSN). Among UTIs acquired in the hospital, approximately 75% are associated with a urinary catheter, which is a tube inserted into the bladder through the urethra to drain urine. Between 15-25% of hospitalized patients receive urinary catheters during their hospital stay. The most important risk factor for developing a catheter-associated UTI (CAUTI) is prolonged use of the urinary catheter. Therefore, catheters should only be used for appropriate indications and should be removed as soon as they are no longer needed. [12] Proper techniques of catheter insertion, catheter maintenance and the proper use of catheter materials (such as antiseptic-impregnated catheters) will reduce the rate of CAUTI. Long-term

catheterization is commonly used management option for older people and short-term catheterization is used in pre-operative and post operative periods. Use of indwelling urinary catheter can lead to complications, most commonly Catheter-associated urinary tract infections. Duration of catheterization is the major risk factor. These infections can result in sepsis, prolonged hospitalization additional hospital costs, and morbidity. In non-acute care settings clean techniques used for intermittent catheterization is an acceptable and more practical alternative to sterile technique for patients requiring chronic intermittent catheterization. [4]

V. Sangamithra, Sneka, Shabana Praveen and Manonmoney (2017) conducted a descriptive study on incidence of catheter associated urinary tract infection in Medical ICU in a Tertiary Care Hospital at Department of Microbiology, SRM Medical College and Research Institute, Chennai, India. The aim of study was to find the microbial pathogens & their antibiotic susceptibility of catheterised patients in Intensive care unit of SRM Medical college hospital. A total of 196 non-repetitive catheterised urine samples taken aseptically from patients admitted in the ICU from October 2016 to December 2016. The demographic profile showed 128 (65%) males and 68 (35%) female. E. coli was 25(36%) the commonest followed by Enterococcus species 17 (25%), Klebsiella species 14 (20%) & Pseudomonas species 4 (5%). [5]

Fortis hospital Mohali, India (2012) conducted a study on prevention of urinary tract infection in client with indwelling catheter under the chairmanship of Dr. Ashish Banargy and named as THE FORTIS APPROACH. Practices were monitored, certain observations were made and a team under the stewardship sister in-charge of that ICU was constituted. Education sessions were held with entire staff of the unit. Changes were made in practices, and these changes were so positive. As a result, the incidence of

urinary tract infection was reduced from ZERO for a FOUR month period. However over a period of time, UTIs started again. This only emphasizes the need for constant efforts and re-dedication to the cause of stamping out HAI. [6]

Research Problem

A pre-experimental study to assess adoption of guidelines on knowledge and practice regarding care of urinary catheter in situ among staff nurses at S.G.R.D. Hospital, Vallah, Amritsar.

Objectives of the study

1. To assess the knowledge and practice regarding care of urinary catheter in situ among staff nurses.
2. To assess the adoption of guidelines on care of urinary catheter in situ among staff nurses.
3. To compare the knowledge and practice score regarding care of urinary catheter in situ among staff nurses.
4. To find out the association of knowledge and practice score with selected demographic variables.

Hypothesis

H1 – There will be a significant gain in knowledge and practice score among staff nurses after adoption of guidelines on care of urinary catheter in situ.

MATERIALS AND METHODS

RESEARCH DESIGN

A pre-experimental design, one group pretest – posttest design, was adopted for this study

O₁ -- Pretest

X -- Intervention (structured teaching programme with power point teaching.)

O₂ -- Posttest

Research variable:

Independent variable: Adoption of guidelines regarding care of urinary catheter in situ.

Dependent variable: Knowledge and practice regarding care of urinary catheter in situ.

Demographic variable:

The demographic variables under the study are Age, Qualification, Total years of professional experience, Total years of experience in ICU, In service education programme attended.

Research setting

The present study was conducted at S.G.R.D. Hospital, Vallah, Amritsar.

Population

Staff nurses from surgical ward, gynecology ward and ICU were selected as population for the study.

Sampling Technique

Convenience sampling technique was adopted to select the participants for this study.

SAMPLING CRITERIA

Inclusion Criteria:

- Staff Nurses present at the time of data collection.
- Staff Nurses who are willing to participate in the study.
- Female patients with urinary catheter in situ.

Exclusion Criteria:

- Staff nurses who will be on leave during data collection period.
- Staff nurses having no registration.
- Male patients with urinary catheter in situ

Description of tool

The tool consists of three parts:

Part A: Socio demographic Profile. It includes items for obtaining personal information of staff nurses i.e. Age, Qualification, Total years of professional experience, Total years of experience in ICU, In-service education programme attended.

Part B: Structured knowledge questionnaire on care of catheter in situ. This form includes 15 multiple choice questions inquiring about the levels of knowledge related urinary catheter care in situ among staff nurses.

Description of intervention

The intervention used by the investigator is guidelines about catheter care. The guidelines consist of articles required to perform catheter care and

steps/procedure for catheter care. The guidelines were explained using power point teaching for about 30 minutes to the staff nurses.

Reliability of tool

Reliability of the tool was tested by using Spearman-Brown Coefficient $r=.790$ and Guttman Split-Half Coefficient $r=.789$.

RESULTS AND DISCUSSION

Table.1 frequency and distribution of demographic variables of staff nurses

S.No	Demographiv variables	Frequency (f)	Percentage (%)
1	Age (in years)		
	a) 21-30	46	76.7
	b) 31-40	08	13.3
	c) 41-50	06	10.0
2	Qualification		
	a) GNM	34	56.7
	b) Post Basic Nursing	12	20.0
	c) B.Sc (N)	14	23.3
3	Total Years of Professional Experience		
	a) ≥ 1	12	20.0
	b) 2-3	23	38.3
	c) 4-5	17	28.3
	d) < 5	08	13.3
4	Total years of experience in ICU		
	a) ≥ 1	12	20.0
	b) 2-3	13	21.7
	c) 4-5	07	11.7
	d) < 5	01	1.7
	e) 0	27	45.0
5	Inservice education programme attended		
	a) Yes	17	28.3
	b) No	43	71.7

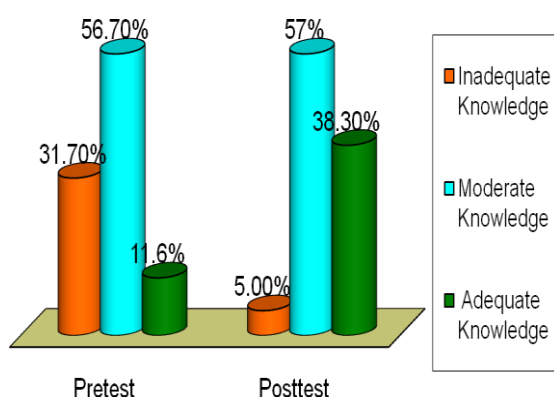


Fig.1 Pretest and Posttest level of knowledge of staff nurses.

Table.2: Effectiveness of guidelines on level of knowledge among staff nurses on care of urinary catheter in situ.

Level of knowledge	Mean	S.D.	't' value	df	'p' value
Pre test	6.93	2.699	-7.875	59	.000 *
Post test	9.62	2.450			

The effectiveness of guidelines on level of knowledge on care of urinary catheter in situ shows that the average mean \pm S.D. for the pre test level of knowledge was 6.93 ± 2.699 and the average mean \pm S.D. for the post test level of knowledge was 9.62 ± 2.450 which was statistically tested by using paired 't' test value was -7.875 with 'p' value <0.01 level of significance which indicates that guidelines was effective in improving the knowledge level of staff nurses.

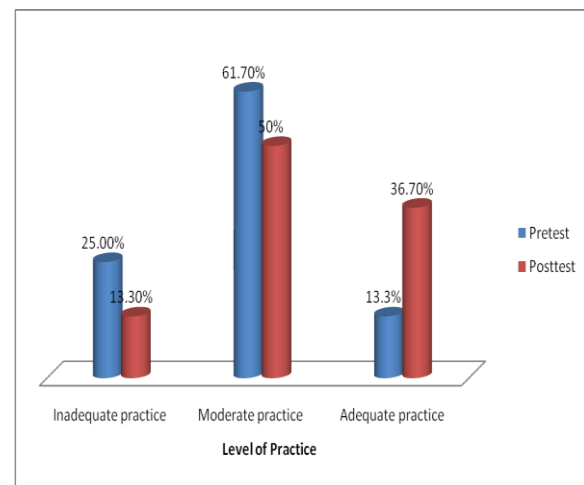


Fig 2: Pretest and Posttest Level of Practice of staff nurses.

Table.3: Effectiveness of guidelines on level of practice among staff nurses on care of urinary catheter in situ.

Level of practice	Mean	S.D.	't' value	df	'p' value
Pre test	8.67	2.932	-6.825	59	.000 *
Post test	11.40	3.470			

The effectiveness of guidelines on level of practice on care of urinary catheter in situ shows that the average mean \pm S.D for the pre test level of practice was 8.67 ± 2.932 and the average mean \pm S.D. for the post test level of practice was 11.40 ± 3.470 which was statistically tested by using paired 't' test value was -6.825 with 'p' value <0.01 level of significance which indicates that guidelines was effective in improving the Practice level of staff nurses.

Table.4: Comparison between pre test knowledge and practice scores of staff nurses on care of urinary catheter in situ

Co relation	Mean	S.D.	'r' value	'p' value
Pre test level of knowledge	6.93	2.699	.231	.076
Pre test level of practice	8.67	2.932		

Table 4 reveals the comparison between pre test knowledge and practice scores of staff nurses on care of urinary catheter in situ shows that the average mean \pm S.D. for the pre test level of knowledge was 6.93 ± 2.699 and the average mean \pm S.D. for the pre test level of practice was 8.67 ± 2.932 . With 'r' value .231 and 'p' value .076 indicates poor correlation.

Table.5: Comparison between post test knowledge and practice scores of staff nurses on care of urinary catheter in situ

Co relation	Mean	S.D.	'r' value	'p' value
Post test level of knowledge	9.62	2.450	.295	.022
Post test level of practice	11.40	3.470		

Table 5 reveals the comparison between post test knowledge and practice scores of staff nurses on care of urinary catheter in situ shows that the average mean \pm S.D. for the post test level of knowledge was 9.62 ± 2.450 and the average mean \pm S.D. for the post test level of practice was 11.40 ± 3.470 . With 'r' value .295 and 'p' value .022 indicates poor correlation.

The association of pre test knowledge scores of staff nurses on care of urinary catheter in situ with socio demographic variables was tested using Chi square test, result shows that age of staff nurses have significant association with level of knowledge 'p' value .046 at 0.05 level of significance. The pre test knowledge score of staff nurses was not significantly associated with other sociodemographic variables such as qualification, total years of professional experience, total years of experience in ICU, inservice education programme attended.

The association of post test knowledge score of staff nurses on care of urinary catheter in situ with socio demographic variables was tested using Chi square test, results shows that total years of professional experience and inservice education programme attended by staff nurses have significant association with post-test level of knowledge with 'p' value .047 and .025 at 0.05 level of significance.

The post test knowledge score of staff nurses was not significantly associated with other sociodemographic variables such as age, qualification and total years of experience in ICU.

The association of pre test practice score of staff nurses on care of urinary catheter in situ with socio demographic variables was tested using Chi square test, result shows that total years of experience in ICU have significant association with level of practice with 'p' value .000 at 0.05 level of significance. The pre test practice score of staff nurses was not significantly associated with other sociodemographic variables such as age, qualification, total years of professional experience, inservice education programme attended.

The association of post test practice score of staff nurses on care of urinary catheter in situ with socio demographic variables was tested using Chi square test results shows that there is no significant association between selected demographic variables and post test practice scores.

CONCLUSION

The study results concluded that staff nurses were having good knowledge and practice regarding catheter care but there was an association between knowledge and practice score with selected variables such as total years of clinical experience and inservice education. Implementation of planned teaching on knowledge and practice on catheter care for staff nurses is necessary to reduce the catheter associated urinary tract infections.

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