10.5958/0974-9357.2019.00096.5

A Study to assess the Effectiveness of SOP on Knowledge and Practice Regarding Urinary Catheterization Procedure among Staff Nurses of Dhiraj Hospital, Vadodara

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Abstract

Background: Urinary tract infection is the most severe type of hospital associated infection. So it is important to enhance knowledge regarding catheterization procedure among the staff nurses. In this study an evaluative research approach with pre-experimental research design was used for collect the data.

Method: A quantitative research approach with pre-experimental one group pre-test post-test design with non probability convenience sampling to collect the 90 samples. A structured questionnaire and Practice checklist was prepared to assess the knowledge and practice of staff nurses.

Result: With regards to the pre test assessment, the score of 19 staff nurses was having adequate level of knowledge and 71 were having inadequate knowledge, in post test 90 having excellent knowledge. The obtained pre test mean score was 8.61 after providing SOP it increased up to 13.83, the mean difference of the pre test and post test is 5.22. The obtained "t" test value 43.57 significant at 0.05 level. Whereas the pre test score of practice shows 51 were has inadequate practice and 39 was having adequate practice, the post test data revels that 90 were having excellent score. The obtained pre test practice of mean score was 8.68 and post test of practice mean score was 13.88; the mean difference of the pre test and post test of practice score is 5.2. The obtained 't' test value 45.11 shows significant at 0.05 level. It indicates that there is increased in the level of knowledge and improves practice after providing SOP. Hence, H1 is accepted. However, the pre test practice score only associate with the age, gender, education qualification & experience Hence, H2 is rejected.

Conclusion: The study concluded that majority of staff nurses were having inadequate level of knowledge and average practice. The SOP was effective among staff nurses in improving knowledge and practice score.

Keywords: *Effectiveness, SOP, Knowledge, Practice, Staff nurses, Catheterization Procedure.*

Introduction

Nosocomial or hospital acquired infections are called Health care associated infections (Burke 2003)[1]. Healthcare-acquired infections (HAIs), also known as nosocomial infections, are infections that patients get while receiving treatment for medical or surgical conditions.

32%	Urinary tract infections
22%	Surgical site infections
15%	Pneumonia (lung infections)
14%	Bloodstream infections

Healthcare associated infections (HCAI) or nosocomial infections constituting a major health problem worldwide; among them the major one is Catheter Associated Urinary Tract Infection.[3]

Nurses are at the frontline of catheter care. As the providers most involved with IUCs in hospitalized patients, nurses are responsible for IUC placement, day-to-day catheter management, and the removal of IUCs. Among catheterized patients, they are often the first to notice a clinical change or technical problem.[4,5]

According to audits, inappropriate use of urinary catheters is widespread. Because of the poor quality of documentation, healthcare staff is often unaware of the

insertion and ongoing care of urinary catheters, so that catheters remain in place of excessive lengths of time, until catheter-related complications occur.[6]

Urinary tract infection attribute to the use of an indwelling catheter is one of the most common infections acquired by patients in health care facilities. As biofilm ultimately develops on all of these devices, the major determinant for development of bacteriuria is duration of catheterization. 70-80% of all urinary tract infections is caused by only indwelling catheterization.[7]

In acute care settings that most of the nurses have poor knowledge regarding CAUTI. Most of the doctors and nurses are unknown with the indication of catheterization and no proper management to monitor the presence of unnecessary catheter.[8]

Need for the study: Nursing is an art science and an essential health care profession in which the skilled knowledgeable persons are Committed to provide care to sick peoples and strive for the, protection and promotion of health and prevention against diseases.[9]

Nurses are responsible and accountable for their actions, decisions and practices to maintain the safety, wellbeing, interests and rights of patients. The nurse must follow the right actions during catheter care of patient and must be implement the proper knowledge and understanding of implications and to care by following the updated policies, protocols, standards and approved practice of evidence base guidelines.[10]

According to the society of Urological Nurses and associate Urological Nursing (2008), mostly indwelling catheters are passed to the patients in the hospital in a very inappropriate way and left unattended.[11]

The incorrect usage and care of indwelling urinary catheter may lead to urinary tract infection in the patients. Moreover, the placement and nursing care after insertion of the indwelling urinary catheter (IUC's) is the practice of the nurses. Nurses should follow the evidence base practices and the approaches to provide indwelling catheter care to the patients. The possibility of catheter in related urinary tract infection increases more if the indwelling urinary catheter is in placed to a patient bladder.[12]

The affirming needs to prevent CAUTI by taking good care of the patients with the urinary drainage system. It is very important for the health care providers to develop guidelines on best practice of CAUTI preventive interventions in hospitals. This can avoid hospital-acquired infections and to identify gaps and controversy issues through the good use of best available evidence.[13]

Nurses are direct contact with patients and provide all type of care. The nurses who can create awareness regarding urinary catheterization and prevention catheter related UTI. But at present health care workers and nurses having poor knowledge regarding catheter associated urinary tract infection, so this study is helpful for future perspectives of all health care associated workers and staff nurses.

Material and Method

Research design: In this study, the research design was pre experimental one group pre-test Post-test design

Setting: Staff nurses from Dhiraj General Hospital, vadodara

Sample: 90 staff nurses from Dhiraj General Hospital

Inclusion criteria

- Staff nurses working in Dhiraj hospital.
- Staff nurses with G.N.M., B.Sc. or PB B.Sc qualification.
- Staff nurses who are present at the time of study.

Exclusion criteria

- A.N.M, & M.Sc nursing staff are excluded.

Tool for data collection

This consists of three parts:

Section 1: demographic variables such as gender, age, education, qualification and area of working.

Section 2: self designed questionnaire will be used to assess the knowledge regarding procedures.

Scoring procedure: For knowledge assessment If answer is right then give 1

If the answer is wrong then give 0.

Scoring interpretation:

Inadequate: <8

Adequate: 9 – 12

Excellent: 13 – 16

Section 3: Practice check list will be used.

Inadequate: <8

Adequate: 9 - 12

Excellent: 13 – 16

Reliability

The reliability of tool established by using split half method Spearman Brown Prophecy formula (r=0.75) reliability test.

Data collection procedure: The formal permission was obtained for the approval of the study from Dhiraj General Hospital, Piparia, Waghodia, Vadoara. The data collection done within a given period of 1 week. The investigator selected the subject and established the rapport by explaining purpose of the study, the co-operation required and the anonymity assured before obtaining verbal consent. Initially the demographic tool, self structured questionnaire and checklist administered to the sample to know existing level of knowledge regarding urinary catheterization procedure, then the SOP was given to the samples of the study. After 7 days post test was administered to assess the effectiveness of the standard operating procedure among staff nurses.

Statistical design: Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 20.0) was used. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). Test of significance (chi square and paired t test) was applied to test the study hypothesis.

Findings

Section A: Description of samples according to their demographic characteristics.

50% staff nurses were in the age group of 21-25 years and remaining 50% are from the age group of 26-30 years.

The highest percentages (95.6%) of staff nurses were female while (4.4%) are male staff.

Maximum (53.3%) of staff nurses belongs from the B.Sc. Nursing and (46.7%) of staff nurses belongs from the G.N.M.

Majority were having (65.6%) 0-2 year of working experience, while (34.4%) staff nurses were having 3-4 year of working experience.

Majority (44.4%) was working in a critical area, (23.3%) were working in a Gynec and obstetric ward, (18.9%) were working in a surgical ward, and (13.3%) were working in a Medical ward.

Section B: Analysis of pre test and post test score of knowledge and practice Regarding Urinary catheterization.

Table 1: Distribution of pre test and post test knowledge score according to the percentage

N=90

Sr. No.	Categories of knowledge score	Percentage	Pre test	Post test
1.	Inadequate	<33%	78.9%	0%
2.	Adequate	34-66%	21.1%	0%
3.	Excellent	>67%	0%	100%

Table 2: Distribution of pre test and post test checklist according to the percentage

N=90

Sr. No.	Categories of attitude	Percentage	Pre test	Post test
1.	Inadequate	<33%	56.7%	0%
2.	Adequate	34-66%	43.3%	0%
3.	Excellent	>67 %	0%	100%

Section C: Effectiveness of Standard operating procedure

Table 3: Comparison between pre test and post test score of knowledge among staff nurses regarding urinary catheterization

N=90

Variable	Pre test	Mean	Mean Difference	Std. Deviation	t-Value
Knowledge regarding urinary catheterization	Pre-test	8.61	5.22	35.99	43.57
	Post-Test	13.83		18.8	

* Significant at 0.05 level, *t (0.05, 89df)

Table 4: Comparison between pre test and post test score of practice among staff nurses regarding urinary catheterization

N=90

Variable		Mean	Mean Difference	Std. Deviation	t-Value
Practice score regarding urinary catheterization	Pre-test	8.68	5.2	0.89	45.11
	Post-Test	13.88		0.75	

* Significant at 0.05 level, *t(0.05,89df)

Section D: Association between pre test knowledge and practice score with socio demographic variables.

Association between pre test knowledge score and socio-demographic variables: These data reveals that association between knowledge of staff nurses and demographic variable. There are no any significant demographic variable. All of the above variables are non-significant.

Hence, research hypothesis H_2 was not accepted.

Association between pre test score of practice and socio- demographic variables

These data reveals that association between practice score of staff nurses and demographic variable. Significant demographic variable are gender of staff nurses with χ^2 value 5.73 (1df =3.84) and professional qualification with χ^2 value 8.80 (2df=5.99) for this variable hypothesis is accepted. The non significant demographic variable was age, qualification experience and working area of nurses. Hence, research hypothesis H_2 was not accepted.

Discussion

The aim of the study was conducted to evaluate the effectiveness of SOP on knowledge and practice regarding urinary catheterization among staff nurses. It was found staff nurses had inadequate knowledge and practice regarding urinary catheterization and sop is effective to improve the knowledge and bring a good practice towards urinary catheterization

Various evidence show the effectiveness of SOP in improving knowledge and practice regarding urinary catheterization. One of the major factors that contributing to the HAI's and CAUTI is improper urinary catheterization practices; the staff nurses are having lack of knowledge regarding urinary catheterization, so it is important that health care provider should provide the knowledge regarding urinary catheterization.

Conclusion

The analysis reveals that the total mean of post-test knowledge and practice score was observed to be significantly higher than the total mean of pretest knowledge and practice score after providing SOP to the staff nurses regarding urinary catheterization. Hence, it is concluded that the SOP was effective to increase the knowledge regarding the ideal catheterization among staff nurses. Education regarding urinary catheterization should be given to all staff nurses to improve their knowledge and practice of procedure which may aid in reducing rate of urinary tract infection.

Conflicts of Interest: The authors declare that there is no conflict of interest statement

Source of Funding: Fund for this research is researcher own.

Ethical Clearance: Ethical clearance for this dissertation was obtained from the ethical committee SVIEC of Sumandeep Vidyapeeth University.

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