Knowledge Regarding Prevention of Urinary Tract Infection In Patients with Indwelling Catheter among Staff Nurses: An Interventional Study

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Abstract

The study based on a broad framework with input, throughput, output and feedback first presented by Ludwing Von Bertalanffy. The investigation utilised an evaluative approach. Samples of 50 staff nurses were collected using random sampling by lottery. A structured questionnaire was used for data collection. The overall pre-test knowledge mean score was 14.14±1.629. After administration of the self-instructional module, the post-test mean score increased to 20.56±4.362. The hypothesis H1 expressed that there will be a considerable distinction between pre-test and post-test information scores of nursing officers regarding urinary tract infection. The 't ' test was discovered to be more prominent than the table worth. Acquired worth was (10.353), and table worth was (2.045). It showed the effectiveness of the SIM. The study was no significant relationship with demographic variables because the chi- square value was less than the table value. Thus, the H2 has been dismissed.

Key words: *Effectiveness, urinary tract infections, knowledge, Self Instructional Module.*

Introduction

The statement underlines the importance of kidneys to our lives. Satisfactory working of the renal system is essential for the support of a sound body.[1] These are the part of the urinary system, which precisely maintains the body's chemical environment and performs various excretory and secretory functions of the body. The urinary bladder works as storage, whereas the ureters and urethra can be considered as waste channels for the urological system. [2] After shaped by the kidneys, when there is a decrease in the outflow of urine, it leads to UTI caused by pathogenic organisms in the urinary tract. It is one of the most common infections treated by primary care providers. The majority of urinary tract infections are brought about by catheterisation.

An indwelling catheter is embedded into the bladder to gather the urine from the bladder. A Foley's catheter is a standard indwelling catheter. Its component is a balloon attachment toward one side. After addition to the catheter, the balloon is packed with sterile water. It keeps the catheter from leakage.[3] Prevalence of urinary tract infections cystitis: 6.2 million grown-ups self-revealed having a bladder infection for every three months within the US 1988- 1994. [4]

It is observed that 10-12% of patients hospitalised and 4% of patients in the community area have a urinary catheter in situ at some random time. Hospital-acquired UTIs create 5 percentage of urinary catheterised understandable – patients per day. With related bacteria in 4% and the 4%number of as 80% is an outcome of the urinary catheter. Health care providers play a vital role in the prevention of infection, except in particular circumstances. All the catheters should be administered in a sterile manner. Using non-sterile techniques ~~can~~ lead to urinary tract infections. [4]

Need for the study

The kidney filters the body's liquid waste in the form of urine and sends it into the bladder to be stored.[5]Urine contains salts, fluids and waste material; however, bacteria is not usually present in the urine. Microorganisms entering the bladder or kidney can regenerate quickly in the urine, causing a urinary tract infection. UTI are perhaps the most widely recognised hospital-acquired infection.[5]

Roughly 40% of all nosocomial infection and 80% of these are related to a urinary catheter's utilisation.[5] The majority of deaths are due to the development of gram-negative bacteria. 33% of these infections are due to the bacteria formed inside the urinary system. 66% to 86% of the diseases happen chiefly due to urinary catheterization.[6]

Nurses are a vital part of in-hospital treatment. They are responsible for taking care of the patients' basic needs throughout the day. It is their responsibility to give the best possible care to prevent any infection during the hospital stay, which is achieved by improving the quality of nursing care.

During the researcher's clinical posting, it was observed that the quality and standard of nursing care given by the staff for a patient with an indwelling catheter was inadequate. Due to that, many patients had developed catheter- associated urinary tract infection. The nursing personnel were consistently answerable for setting and keeping up the urinary catheter framework, including cleaning and different works.

Methodology

This pre-experimental study approved by the Institutional Ethical Committee (IEC-1988 A) was conducted from December 2014 to March 2015 in the hospital of Sri Guru Harkrishan Sahib College, Mohali. Formal permission was taken. Composed assent was sought from the subjects of the investigation.

Study design and setting

The study comprised a "Pre-Experimental One group Pre-test and Post-test Design" in SGHS hospital equipped with 300 beds and an intensive care unit with 60 beds.

Sample and Sample Size

The hospital had one hundred twenty staff nurses working in different units in shift duties. A sample of 50 nurses was selected by the non-replacement simple random sampling lottery method with the following inclusion and exclusion criterion.

Methods and tools of data collection

A questionnaire was used for accurately collecting data, followed by administering a self-instructional module. Based on the goals, the instrument was isolated into two segments.

Selection and development of a tool

A structured questionnaire was developed through reviewing of literature via pubmed, cinhal, experts, guides, co- guides is utilized as an apparatus for present investigation. Apparatus will be chosen in the wake of surveying the literature and after discussing with specialists.

Reviewing literature via pubmed, cinhal, experts, the guides developed a structured questionnaire, and co-guides used it for investigation

Description of tool

Segment I: Demographic variables

Segment II: Structured knowledge questionnaire. The tool consists of 30 items. Segment II: Structured questionnaire.

The questionnaire made in English, contained 30 multiple-choice questions with four options. Each correct response earned one mark. The incorrect response earned no marks.

The questionnaire covered different areas - introduction, definition and types, causes, risk factors,

sign and symptoms, prevention and management.

Procedure of Data Collection

Immediately after that, knowledge development tools were administered, and a pre-test was conducted after that SIM was introduced. After seven days, a post-test was conducted.

Results

Table 1 : Frequency distribution of overall knowledge score among staff nurses regarding UTI

Criteria on Measurement of Knowledge Score		
Level	**PRE Frequency (f)**	**POST Frequency (f)**
Below average (1-14)	31 (62%)	9 (18%)
Average (15-22)	19 (38%)	15 (30%)
Above average (23-30)	0 (0%)	26 (52%)

Table 1 illustrates the frequency and percentage distribution of the staff nurses' knowledge base in the pre and post- test scenarios. The pre-test outcome showed that 62% of participants had below-average knowledge, and 38% had average knowledge. No one qualified the above-average score.

The post-test score demonstrated a distinct improvement in their knowledge. 52% of the nurses had acquired better than expected information, while 30% had the required standard information. However, 18% of the nurses in the post-test continued to have below-average information.

Discussion

This study, based on a sample size of 50 nurses, demonstrated that 62% of the participants had low knowledge, 38% had average knowledge about the sensitivities/criticalities of catheter application. No participant possessed good knowledge in the pre-test scores.

The self-instructional module content on urinary tract infection included introduction, definition, types, risk factors, causes, sign and symptoms, prevention, and management. The self-instructional module was administered to the staff nurses soon after the pre-test. The post-test score was assessed by paired 't' test. The mean of the post-test was

20.56 with SD of 4.362 and a paired value of 10.353, implying that the post-test score had better than the pre-test of staff nurses. The hypothesis (H1) that there was a difference between knowledge of pre-test and post-test scores was thus accepted. Overall, the pre-test mean score of staff nurses was 14.14 (SD+1.628), and the post-test mean score was 20.56 (4.362), implying that the improvement mean being 6.420. The determined 't' test value was 5.79, which was more than the table value, which shows a considerable distinction between the pre-test and post-test scores of nurses concerning urinary tract infection. This also implied that the self-instructional module was practical. The determined chi-square values did not match exactly with the table values, implying no significant association between the demographic variables. Hence the hypothesis (H2) was rejected.

Conclusion

The findings showed that the teaching program effectively enhanced the work knowledge and reduced the occurrences urinary tract infections in patients with indwelling catheters. The study recommended the necessity of conducting regularly, in-service education programs for nursing personal regarding the prevention of urinary tract infections to enhance patient safety and quality of care in hospital.

Ethical Issues: informed written consent was taken No author had any conflict of interest to declare.

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