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A Study to Evaluate the Effectiveness of Health Education Program on Knowledge Regarding CLABSI on B.SC. Nursing Students Studying in Sharda University, Greater Noida, Uttar Pradesh

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Abstract:- Introduction: Central line-associated bloodstream infection (CLABSI) When a central artery is infected with pathogens or viruses, it can be quite serious. Healthcare providers may put a central line into one of the larger veins to give medicines, fluids, or blood products, or draw blood for lab tests that people need over a long period. A CLABSI is a laboratory-confirmed bloodstream infection not found to be present or incubating on admission and the patient has had a central line in place for > =2 calendar days by the day of the event, with that same organism also being RECOGNIZED from one other sterile site. Aim: The study aimed to determine the effectiveness of the health education program or knowledge regarding CLABSI. Methodology: A quasi-experimental pretest one-group and post-test design was adopted. In this situation, the population of the study, and the inclusion, and exclusion criteria were applied. Use of sample size, sampling techniques, validation, and data collection participants Population of the study included all B.Sc. Nursing undergraduate students at Sharda University School of Nursing. Research incurred from May to June 2024. A purposive sampling strategy was used in the selection and determination of the sample size of the study which was 60 students using the independent t-test formula. Result: The study shows that 68.3% of the participants must have a poor level of knowledge. 23.3% had an average level of knowledge 8.3% had a good level of knowledge regarding the pretest, a maximum of 63.3% they were having a good level of knowledge, about 26.7% of them are having an average level of knowledge, 10% of them had a poor level of knowledge regarding it. From the pre-test to the post-test the mean knowledge score has significantly increased, in the pre-test was 9.83 S. D= 4.00 and in the post-test, it iwas 15.65 and S. D= 3.99. The Paired T-test value is -8.85 and the p-value is less than 0.01. Conclusion: According to the findings, nursing students need to have a comprehensive grasp of CLABSI to build an understanding of the illness state and to receive proper treatment to prevent the development of other life-threatening disorders and sepsis.

Keywords:- *Central Line-Associated Bloodstream Infection (CLABSI), Central Venous Catheter, Nosocomial Infection, Hospital-Acquired Infection (HAI), Intensive Care Unit (ICU).*

I. INTRODUCTION

The hospital-acquired infections are healthcare-associated infections that result from medical treatment in a variety of settings related to healthcare clinics, hospitals, and outpatient facilities or during surgery. Infections were either silent or quiescent at admission.[1] These include catheter-associated urinary tract infections, central line-associated bloodstream infections, surgical site infections ventilator-associated pneumonia or hospital-acquired pneumonia, and clostridium difficile.[2] Signs of infection include cough, possibly with sputum production respiratory distress belly pain new onset skin tenderness altered mental state, or arrhythmia in the lower abdominal paints urinary retention painful urination rib steal maneuvers tender on one side. [3]

Central venous catheters are beneficial for many reasons, but they also can induce life-threatening bloodstream infections. This lack of compliance further increases the risk for central line-associated bloodstream infections, as well as failures in safe insertion and maintenance protocols carried out by nurses and healthcare personnel.[4] In response to the increasing risk of morbidity and mortality associated with Central Line-Associated Bloodstream Infections (CLABSIs) initiatives must be established that prevent harm, protect patient safety, and enhance staff wellbeing. [4,5]

A. Purpose

- To assess the pretest knowledge regarding CLABSI
- To prepare validate and implement a health education program on CLABSI
- To determine the effectiveness of health education program knowledge regarding CLABSI among B. Sc. Nursing students.

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B. Research Hypotheses:

- H1: There will be a statistically significant difference in the level of knowledge related to CLABSI, as measured by pretest and post-test scores.
- H2: There will be a statistically significant association between the level of knowledge regarding CLABSI among B.Sc. undergraduate students with their selected demographic variable

II. METHODOLOGY

A quasi-experimental one-group pretest and post-test design was used. To carry out the research the population of the study, the inclusion criteria, and the exclusion criteria were used. Use of sample size, and sampling techniques, validation data collection participants were used Population of the study included the B.Sc. Nursing undergraduate students in Sharda University designated school of Nursing. The research was conducted from May to June of 2024. Using a purposive sampling strategy, the study's sample size was 60 (using the independent t-test formula).

A. Ethical Consideration:

Permission was obtained from:

- Head of the Institute, Dean/Principal – Sharda School of Nursing Science and Research, Sharda University.

➢ **Inclusion Criteria:**

- B.Sc. Nursing students studying in Sharda University
- Students who all were present during the data collection.
- Students who were willing to participate.

➢ **Exclusion Criteria:**

- Students who were absent during the data collection

B. Data Collection Tools And Techniques:

The instruments used for the data collection are as follows:

- Tool 1: Demographic Profile
- Tool 2: Self Structured Questionnaires.

C. Statistical Analysis:

Using the statistical program EZR descriptive and inferential statistics were utilized to analyze the data by the aims and hypothesis.

III. RESULT

According to the study, the age distribution shows that the majority are between 18- 23 years old, with 45% aged 18-20 & 48.3% aged 21-23, while only 6.6% are older than 23 years. Gender wise 65% are female and 35% are males. Regarding clinical postings for 2 months, followed by 13.3% for 3 months, 8.3% for 1 month, and 5% for 4 months. The area of posting includes 31.7% in the surgical ward, 26.7% in the medical ward, 16.7% in the ICU, 15% in the labor ward, and 10% in the emergency. As for sources of information, 60% obtained it from hospitals, 33.3% from the Internet, and 6.7% from institutions. In the pretest, a significant majority of students (68.3%) exhibited poor knowledge, 23.3% had average knowledge and only 8.3% demonstrated good knowledge. However, the post-test results indicated a substantial improvement: the proportion of students with poor knowledge dropped drastically to 10.0%, those with average knowledge increased to 26.7% and the percentage of students with good knowledge surged to 63.3%.

IV. DISCUSSION

The pre-test group of undergraduate B. Sc. Nursing students demonstrated a statistically significant ($p<0.01$) advantage in knowledge scores over the post-test group, as evidenced by the pre-test score of 9.83±4.00 and the post-test score of 15.65±3.99. This suggests that the pre-test group was better informed about central line-associated bloodstream infection. Hence, it is evident that the implementation of a health education program resulted in a post-test knowledge assessment, which revealed a substantial difference indicating improved comprehension of CLABSI following the program. Based on a comparison with a study conducted the present data reveals that the average pre-test knowledge scores for preventing central venous line-related bloodstream infection were 5.8, indicating a statistically significant difference ($p=0.000$). [6]

V. CONCLUSION

To ensure nursing students understand disease states and provide appropriate care, it is essential to teach about CLABSI as it can prevent other infections. Consequently, both its incidence and complications should be reduced. The use of aseptic techniques in hospitals will help prevent CLABSI and related problems and decrease the chances of sepsis. The investigation has shown that CLABSI is a common route of infections, disease, lengthy hospitalizations, and other issues in the ICU and surgery. Therefore, explaining the condition can help patients be better prepared to deal with it.

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