RESEARCH PAPER

A study to assess the knowledge and practices regarding prevention of Catheter-Associated Urinary Tract Infection (CAUTI) among nurses at SGT Hospital, Gurugram, Haryana

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ABSTRACT

Catheter-Associated Urinary Tract Infection (CAUTI) is one of the most common diseases linked to healthcare. It still causes a lot of illness, longer hospital stays, and higher healthcare costs around the world. CAUTI happens a lot, even though it can be mostly avoided by following methods that have been shown to work. This is especially true in places where infection control measures are not always followed. The goal of this study was to find out what nurses at SGT Hospital in Gurugram, Haryana, knew and did to avoid getting a catheter-associated urinary tract infection.

A descriptive research design was used with a quantitative research technique. A method called "convenience sampling" was used to choose 100 nurses. A organized questionnaire with a knowledge assessment tool and a practice checklist was used to collect the data. Both descriptive and inferential statistics were used to look at the data.

The results showed that 52 nurses (52.0%) knew enough about preventing CAUTIs, 30 nurses (30.0%) knew somewhat enough, and 18 nurses (18.0%) knew not enough. There were 51 nurses with good practices (51.0%), 16 nurses with average practices (16.0%), and 33 nurses with bad practices (33.0%). The average score for understanding was 15.64 (± 6.47), and the average score for practice was 6.13 (± 3.69). A strong link was found between knowledge results and certain demographic factors, according to the study.

The study found that even though more than half of the nurses had enough knowledge and good practices, a large portion still had gaps. This shows that nurses need to keep learning, go through training programs, and strictly follow infection control guidelines to make patients safer and lower the number of CAUTI cases.

Keywords: PCOS, Nesfatin-1, Dyslipidemia, Anthropometric indices, BMI, Lipid profile.

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INTRODUCTION

The name "Catheter-Associated Urinary Tract Infection" (CAUTI) comes from three main parts that together describe the disease. With a catheter-associated condition, there is an indwelling urinary catheter, a medical device that is put into the bladder to help pee drain. An individual's kidneys, ureters, bladder, and urethra make up the "urinary tract." This system is in charge of producing, storing, and releasing pee. For example, a "infection" is when pathogenic microorganisms get into the urinary system and multiply, causing symptoms.

Catheter-Associated Urinary Tract Infection is a medical term for a urinary tract infection that happens in a person who has an indwelling urine catheter or the catheter was removed within the last 48 hours. Bacteria usually get into the urinary system through the intraluminal or extraluminal path, causing colonization and infection. Cancer of the uterus and tubercle infections (CAUTI) are very common and can tell you a lot about how well patients are being cared for in hospitals.

Globally, a big part of healthcare-associated diseases are CAUTI, especially in intensive care and emergency rooms. An infection risk rises with catheterization length, and the daily risk is between 3% and 7%. Despite improvements, CAUTI is still a big problem in India, with research showing high rates of infection in hospitalized patients. The frequency is increased by things like using catheters for long periods of time, not following aseptic methods properly, and not having consistent infection control practices.

Although nurses don't personally insert, maintain, or watch over patients, they are very important in preventing and controlling CAUTI. The outcomes for patients are greatly affected by their understanding and clinical practices. Aseptic methods, keeping the drainage system closed, good perineal hygiene, and taking out catheters when they're not needed are all good ways to avoid getting this problem.

Guideline-based practices and gaps in nurses' knowledge can make it more likely for patients to get infections, even when standards are available. Evaluate nurses' understanding and actions related to preventing CAUTI is necessary to find problems and make the right fixes. Within this context, this study looked at what nurses at SGT Hospital in Gurugram, Haryana, knew and did to help stop catheter-associated urinary tract infections.

Objectives of the Study:

1. To assess the level of knowledge of nurses regarding the prevention of Catheter-Associated Urinary Tract Infection (CAUTI) at SGT Hospital, Gurugram, Haryana.
2. To assess the practices of nurses regarding the prevention of Catheter-Associated Urinary Tract Infection (CAUTI) at SGT Hospital, Gurugram, Haryana.
3. To find the association between the level of knowledge of nurses regarding the prevention of Catheter-Associated Urinary Tract Infection (CAUTI) and their selected demographic variables.

METHODOLOGY

For this study, a quantitative research method was used to examine nurses' understanding and habits regarding the avoidance of catheter-associated urinary tract infections (CAUTI). The study was done with nurses from different clinical areas at SGT Hospital in Gurugram, Haryana. Staff nurses who work in hospitals were the study's target community. A convenience sampling method was used to choose 100 participants from this group for the main study. Along with the main study, a pilot study with 20 nurses was done to see how well the data collection tools and study process worked in terms of being able to be used and being clear. The pilot study showed that the tools worked well and could be used for the main study. However, to keep the methodological rigor, the pilot study subjects were not included in the final analysis. A socio-demographic questionnaire, a structured knowledge questionnaire, and a practice questionnaire were used to collect data. The socio-demographic questionnaire got basic information about the participants, while the structured knowledge questionnaire found out how much they knew, and the practice questionnaire found out how they prevented CAUTI. A structured approach was taken to the data collection process to make sure that the answers were consistent and correct.

RESULTS

Socio-Demographic Characteristics

The present study included 100 nurses working at SGT Hospital, Gurugram, Haryana. The majority of participants (60.0%) were in the age group of 22–25 years, followed by 30.0% above 21 years, 9.0% in the age group of 25–30 years, and 1.0% above 30 years.

With regard to gender distribution, 67.0% of the participants were female, while 33.0% were male, indicating a predominance of female nurses in the study setting.

In terms of educational qualification, most of the participants (85.0%) were graduates, whereas 8.0% were postgraduates and 7.0% held a diploma in nursing.

Regarding clinical experience, a majority of nurses (63.0%) had less than 1 year of experience, followed by 26.0% with 1–3 years of experience, 10.0% with 3–5 years, and only 1.0% had more than 5 years of experience.

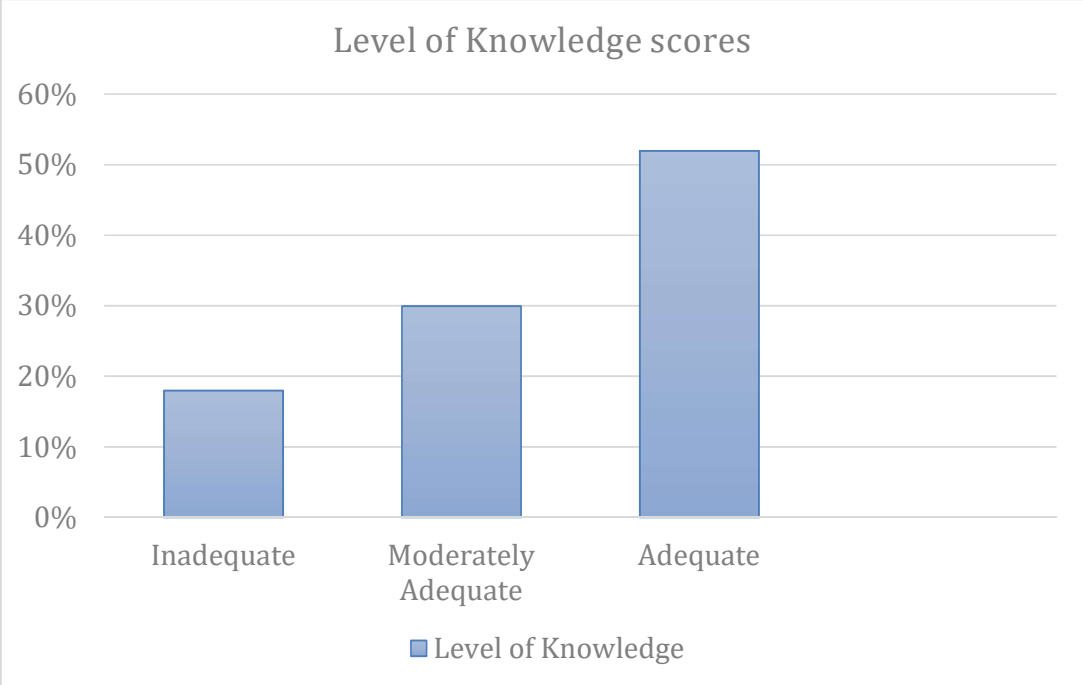
Concerning previous exposure to CAUTI-related training, 46.0% of the participants had received training on CAUTI prevention, while a slightly higher proportion, 54.0%, had not received any such training.

Table 1: Frequency and Percentage Distribution of Demographic Variables
(N = 100)

S. No	Variable	Category	Frequency (f)	Percentage (%)
1	Age	Above 21 years	30	30.0%
		22–25 years	60	60.0%

		25–30 years	9	9.0%
		Above 30 years	1	1.0%
2	Gender	Male	33	33.0%
		Female	67	67.0%
3	Qualification	Diploma	7	7.0%
		Graduation	85	85.0%
		Post graduation	8	8.0%
4	Clinical Experience	<1 year	63	63.0%
		1–3 years	26	26.0%
		3–5 years	10	10.0%
		More than 5 years	1	1.0%
5	CAUTI training received	Yes	46	46.0%
		No	54	54.0%

Graph 1: Distribution of Knowledge Scores



Graph 2: Distribution of Practice Scores

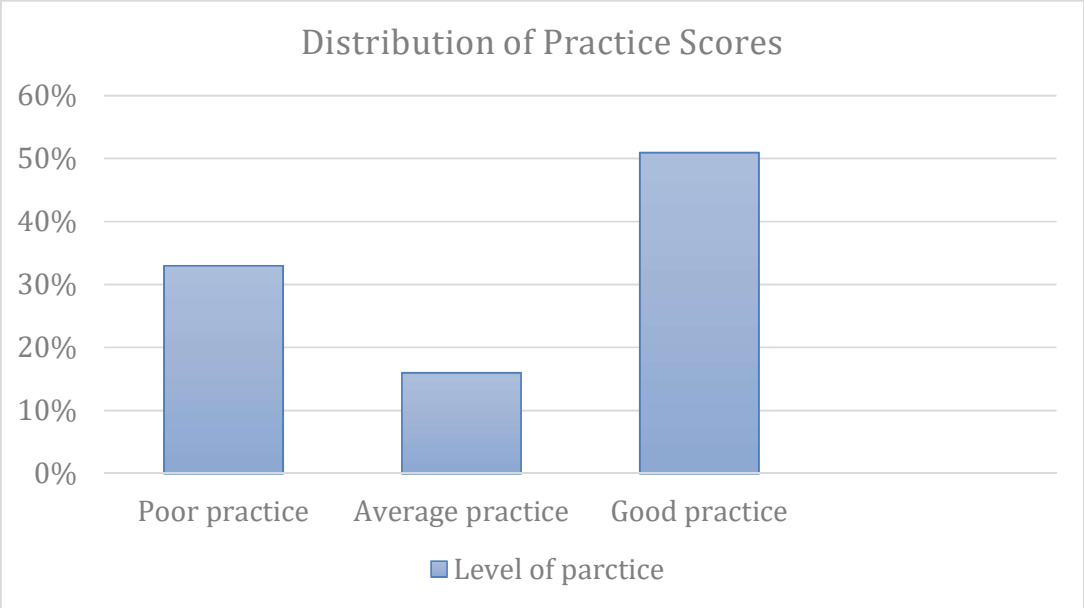


Table 2: Descriptive Statistics of Knowledge and Practice Scores

(N = 100)

Variable	Mean	Median	Standard Deviation	Range
Knowledge score (out of 25)	15.64	17	6.47	5–25
Practice score (out of 10)	6.13	8	3.69	0–10

The mean knowledge score of the participants was 15.64 ± 6.47, while the mean practice score was 6.13 ± 3.69. The findings indicate variability in both knowledge and practices among nurses regarding prevention of Catheter-Associated Urinary Tract Infection (CAUTI). These results suggest that although a proportion of nurses demonstrated adequate knowledge and good practices, there remains a noticeable gap that highlights the need for further training and reinforcement of infection control measures.

Interpretation 1: Association between Level of Knowledge and Selected Demographic Variables

The findings show that there was no statistically significant association between knowledge level and age ($\chi^2 = 5.12$, df = 6, $p > 0.05$), qualification ($\chi^2 = 8.11$, df = 4, $p > 0.05$), clinical experience ($\chi^2 = 3.88$, df = 6, $p > 0.05$), and CAUTI training received ($\chi^2 = 4.62$, df = 2, $p > 0.05$). This indicates that knowledge levels were not significantly influenced by these variables.

However, a statistically significant association was found between knowledge level and gender ($\chi^2 = 9.24$, df = 2, $p < 0.05$), suggesting that knowledge levels differed between male and female nurses.

Interpretation 2: Association between Level of Practice and Selected Demographic Variables

Table 6 shows the association between level of practice and selected demographic variables among 100 participants using the chi-square (χ^2) test.

The results indicate that there was no statistically significant association between practice level and age ($\chi^2 = 4.28$, df = 6, $p > 0.05$), clinical experience ($\chi^2 = 5.11$, df = 6, $p > 0.05$), and CAUTI training received ($\chi^2 = 2.74$, df = 2, $p > 0.05$).

However, a statistically significant association was found between practice level and gender ($\chi^2 = 10.62$, df = 2, $p < 0.05$), indicating differences in practice between male and female nurses. Qualification also showed a significant association with practice level ($\chi^2 = 11.24$, df = 4, $p < 0.05$), suggesting that higher educational qualification may influence better practices.

DISCUSSION

The present study was carried out with the aim to examine the knowledge and practices related to the prevention of Catheter-Associated Urinary Tract Infection (CAUTI) among nurses of SGT Hospital, Gurugram, Haryana. The results showed that 52.0% of participants had adequate knowledge, 30.0% had slightly adequate knowledge and 18.0% had inadequate knowledge. In terms of practices, 51.0% of the nurses had good practices, 16.0% had average practices and 33.0% had poor practices.

The mean knowledge score (15.64 ± 6.47) and mean practice score (6.13 ± 3.69) suggest moderate diversity among participants, indicating inconsistent comprehension and application of CAUTI prevention methods. While some of the nurses exhibited adequate knowledge and practices, the existence of gaps highlights the need for improvement.

These findings are consistent with previous research indicating that nurses often have moderate awareness and inadequate behaviors about CAUTI prevention. Previous studies have also revealed a gap between knowledge and practice, demonstrating that theoretical comprehension, even if sufficient, does not necessarily translate into effective clinical performance. This difference could be due to workload, non-compliance to the protocols, lack of training and less monitoring.

The study indicated a statistically significant correlation of knowledge score with gender. No statistically significant association was identified with age, educational qualification and clinical experience. This indicates that knowledge levels are perhaps different in particular demographic groups and can be based on exposure and training rather than experience alone.

Furthermore, more than half of the participants were not trained on CAUTI prevention which may lead to inconsistency in knowledge and practice. Given the critical role of nurses in infection prevention, it is important to improve their competencies. The overall findings point towards the necessity for continued education, periodic training programs and rigorous adherence to infection control standards to increase patient safety and reduce the occurrence of CAUTI.

CONCLUSION

The present study concluded that nurses at SGT Hospital, Gurugram, Haryana possess a moderate to adequate level of knowledge and practices regarding prevention of Catheter-Associated Urinary Tract Infection (CAUTI). However, the presence of inadequate knowledge and poor practices among a significant proportion of participants highlights existing gaps in clinical competency.

The study findings indicate that knowledge alone is not sufficient, and there is a need to ensure its effective translation into clinical practice. Strengthening training programmes, reinforcing infection control guidelines, and promoting adherence to evidence-based practices are essential to improve patient care outcomes and reduce the incidence of CAUTI.

RECOMMENDATIONS

- A similar study can be conducted with a larger sample size across multiple hospitals to enhance generalizability of findings.
- Interventional studies can be undertaken to evaluate the effectiveness of training programmes on improving knowledge and practices related to CAUTI prevention.
- Comparative studies can be conducted to assess differences in knowledge and practices among nurses working in different clinical settings such as ICU, wards, and emergency units.

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