



“ASSESS THE KNOWLEDGE AND PRACTICE OF CRITICAL CARE NURSES' ABOUT CARE AND MAINTENANCE OF CENTRAL VENOUS CATHETER”

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ABSTRACT A descriptive study was done to “assess the knowledge and practice of critical care nurses about care and maintenance of central venous catheter” By using purposive sampling technique, 100 critical care nurses giving care to the patients with central venous catheter were selected and studied using structured knowledge questionnaire to assess level of knowledge, and checklist to assess level of practice. Analysis was done by descriptive and inferential statistics by using SPSS. It is found that there is no correlation between knowledge and practice of critical care nurses about care and maintenance of central venous catheter. There was no significant association between knowledge and practice of critical care nurses regarding central venous catheter care and maintenance with selected demographic variables except association between practice of critical care nurse with total years of work experience ($\chi^2 4.22$) ($P < 0.05$) and area of present work ($\chi^2 15.06$) ($P < 0.05$).

KEYWORDS : Knowledge; Practice; Critical Care Nurse; Care and Maintenance.

INTRODUCTION

People with life threatening injuries and sicknesses need critical care. Critical care involves close, constant attention by a team of specially trained health professionals. It usually takes place in an intensive care unit¹ Access to peripheral vein is a commonly encountered problem in critical care units and in surgical patients, especially, critically ill patients. Introduction of central venous catheters has greatly simplified this problem and facilitated the management of patient with poor peripheral venous access, especially in critically ill patient.² Centrally inserted catheters {also called central venous catheters (CVCs)} are inserted into a vein in the neck or chest (subclavian or jugular) or groin (femoral) with the tip resting in the distal end of the superior vena cava. The other end of the catheter is either non tunneled or tunneled through subcutaneous tissue and exits through a separate incision on the chest or abdominal wall. Central venous catheter (CVC) is a commonly used access device inserted in patients who are critically ill, as they provide reliable venous access for clinical activities such as blood sampling, infusion of medications and hemodynamic measurement. Prevention of catheter related infection is the key to the successful use of central venous catheter. Most infections that do occur result from contamination of the exit site or catheter hub. Nurse must follow strict guidelines or protocols for the care of the vascular access device before, during, and after its insertion.

The objectives of the study were as follows -

- Assess the knowledge of critical care nurses regarding care and maintenance of central venous catheter.
- Assess the practice of critical care nurses regarding care and maintenance of central venous catheter.
- Determine the correlation between knowledge and practice of critical care nurses regarding care and maintenance of central venous catheter.
- Find out the association of knowledge and practice with selected demographic variables.

METHODOLOGY

A quantitative descriptive design was used to determine the knowledge and practice of critical care nurses about care and maintenance of central venous catheter. The sample consists of 100 registered nurses giving care to patients with CVC who are working in Intensive Care Units of Caritas Hospital. Ethical clearance was obtained from the Institutional Ethics Committee. Data were collected using demographic data sheet, structured knowledge questionnaire and observational checklist to assess practice regarding care and maintenance of central venous catheter. Demographic data sheet consisted of structured questionnaire on socio-personal and professional data. A total of 30 items regarding general aspects of central venous catheter, care and maintenance of central venous catheter and its complications was included in the questionnaire. A protocol for care and maintenance of central venous catheter was prepared in advance by the investigator it consists of 40 steps regarding

care and maintenance of central venous catheter. Based on the prepared protocol observation checklist was developed and investigator assessed the practice of staff nurses regarding care and maintenance of central venous catheter.

RESULTS

Data were analyzed by descriptive and inferential statistics using Microsoft Excel and SPSS.

Distribution of socio demographic characteristics

Among 100 respondents , most (94%) of the subjects were females, about (51%) were in the age group of 26 - 30 years. 53% were having more than 37 months of intensive care unit experience, 51% of critical care nurses were having 5 - 10 years experience. majority (71%) were having area of previous experience in intensive care unit (ICU). (80%) of critical care nurses were having source of information regarding the topic from Continuing Nursing Education and In-Service Education.

Table 1 - Correlation between knowledge and practice of critical care nurses regarding care and maintenance of central venous catheter

Category	Mean	SD	r
Knowledge	19.5100	3.386	.091
Practice	23.4700	4.751	

From the above table, r value is .091. This shows that there is no correlation between knowledge and practice and the test is not significant at 0.05 level of significance.

Table 2 - Association between the practice of critical care nurses and selected demographic variables like total years of ICU experience, total years of experience. (n=100)

Demographic Variable	Level of practice		χ^2	df
	Below median	Above median		
Total years of ICU experience				
0 – 24 months	12	24	4.218*	1
More than 25 months	35	29		
Total years of work experience as bedside nurse				
0 – 3 years	13	19	.768	1
3 - 10 years	34	34		

The calculated value of χ^2 at 1 degree of freedom is 4.218 which is greater than the table value (3.841). So it is significant at 0.05 level of significance. Hence the null hypothesis is rejected and the research hypothesis is accepted. Therefore it can be inferred that there is a statistically significant association between practice of critical care nurses' regarding care and maintenance of central venous catheter and their total years of intensive care unit (ICU) experience ($P < 0.05$).

The calculated value of χ^2 at 1 degree of freedom is .768 which is less

than the table value (3.841). So it is not significant at 0.05 level of significance. Hence the null hypothesis is accepted. Therefore, there is no statistically significant association between practice of critical care nurses' regarding care and maintenance of central venous catheter and total years of work experience as bedside nurse

DISCUSSION

Among the 100 samples in the present study, majority of the samples were females (94%). Findings in another study on evaluation of nurses' awareness and practice of hemodialysis access care in Sudan revealed that among the nurses, 72 % were females which strongly supports our findings.³ The study findings in Kathmandu Teaching Hospital, Sinamangal was also consistent with regard to gender, where the majority of the samples (83.33 %) were females.

The present study showed there is an association between practice of critical care nurses and selected demographic variables like total years of ICU experience ($P < 0.05$) and area of present work ($P < 0.01$), which contrasts with the previous study findings done in India on Impact of Structured Education on Knowledge and Practice Regarding Venous Access Device Care. Which revealed no significant association between the two.

From the study, it was observed that there is an association between practice of critical care nurses and selected demographic variables like total years of ICU experience and area of present work. There is no correlation between knowledge and practice of critical care nurse in care and maintenance of central venous catheter

CONCLUSION

For improved client outcomes, nurses must be able to apply information from research and implement those evidence-based findings in the care of complex clients' needs. So it can be concluded that assessing the knowledge and practice of critical care nurses helps to find out the need for revised procedural manual/protocol of care and maintenance of central venous catheter based on evidence through research and also, this confirms periodical evaluation of current procedural manual adherence. An evaluation improves the patient care outcome and improves the quality of care by the critical care nurses thereby assuring quality.

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