Knowledge and Practices on Intra Venous Cannulation among Student Nurses

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Abstract

Back ground: The study is generally concerned about the care and maintenance of peripheral intravenous (IV) cannulation and to assess the knowledge and practice of student nurses towards care and maintenance of IV cannula. Intravenous cannulation is a commonest procedure performed by student nurses and staff nurses in hospitals and the procedure is closely associated with the risk of nosocomial infections if standard care is not provided. **Design**: Non experimental descriptive study design was carried out and non-probability convenience sampling method used for data collection. **Methods**: Nurses knowledge and practice towards intravenous cannulation were assessed using a validated semi-structured self-administered questionnaire. Reliability was assessed using Cronbach's α coefficient method.Data were analysed through SPSS program and Microsoft excel. **Result** :The findings revealed that 54% respondents were doing correct practices and only 6% shown poor practices in IV cannulation. Most student nurses (68%) has good subject knowledge of caring and maintaining peripheral intravenous cannulation but there were some(8%) without proper knowledge. None of the demographic variables and scores of knowledge and practice has an association except education and the practice score. Education and practice score showed the significant relation. Conclusion: Only 6-8% of total sample expressed poor practices and knowledge . Anyhow this can be dangerous also as student nurses are dealing with patients in hospital. Further education need to be given to the student nurses before practicing on patients.

Key words: *IV cannula, Nursing, Intravenous*

Introduction

Intravenous (IV) cannula support to distribute IV fluids directly into a vein to maintain normal fluid or electrolyte balance.[1]Intravenous Cannula means a tube that can be inserted into the body, often for the delivery or for the gathering of samples.[2]

The procedure of establishing peripheral venous access carries the risk to both the patient and the practitioner. Complications includeinfection, phlebitis and thrombophlebitis, emboli, pain, haematoma, extravasation, arterial cannulation and needle stick injuries[4].Nurses play a vital role in the prevention of such complications like infections. Most of the interventions and prevention strategies such as insertion and assessing intra venous catheter site are part of routine care .The nurse should have accurate knowledge of the preparation and administration of the IV Infusion and IV device. In addition, they should also know about the prevention, treatment and management of local and systematic complications supported by dynamic evidence-based practice guidelines. One of the major risks for phlebitis occurrence is due to the placement and maintenance of IV cannulation by insufficiently trained staff.[5]previous studies suggested that phlebitis is one of the commonest complication and around 31% observer in hospitals however monitoring IV fluids in general admission and ward areas of hospitals is often left to staff nurses and sometimes to student nurses who may lack in required competence so the present study aimed to assess the knowledge and practice towards care of Intra venous cannula among student nurses in selected colleges of Thiruvallur City.

Objectives of Study include 1)To assess the knowledge on Intra venous cannula among student nurses in selected nursing colleges at Thiruvallur District. 2) To assess the practiceson Intra venous Cannula among student nurses in selected nursing colleges at Thiruvallur

District. 3)To associate the demographic variables with the knowledge score 4)To associate the demographic variables with the practice score

Methodology

Non experimental descriptive research approach used for the study .non–probability convenience sampling method was used. Sample size consists of 50 adolescent students studying in under graduate nursing colleges .Student nurses who are willing to participate and Student nurses who are doing second and third year B.Sc. Nursing degree programme were included in the study. Student nurses who are doing GNM, P.B.B.Sc. nursing, M.Sc. Nursing and first year B.Sc. nursing degree were excluded in the study. Sampling technique applied for the study was Purposive sampling technique.

Development and Description of Tool: Part I consist of selected demographic variables questionnaire consist of age, sex, education, and area of residence and year of studya and Part II:Consists of structured questionnaire on knowledge regarding care and maintenance of intravenous cannula like indication, contraindication, risk factors, and complication.

The tool was given to 8 experts in the field of health sciences and content validity checked for the self-structured questionnaire . All the comments and suggestions given by the experts were duly considered and corrections were made. Reliability was assessed using Cronbach's α coefficient method used to check the internal consistency and the value is 0.76 and the instrument is highly reliable.

Result & Discussion

Table 1 :Section I: Frequency and percentage distribution n=50

Sr.No	Demographic Variables	Frequency	Percentage (%)
1	Age		
	17-19 years	13	26.0
	20-22 years	33	66.0
	23- 25 years	4	8.0
2	Gender		
	Male	15	30.0
	Female	35	70.0
3	Education		
	BSc Nursing second year	20	40.0
	BSc Nursing third year	8	16.0
	BSc Nursing fourth year	22	44.0
4	Residence		
	Urban	45	90.0
	Rural	5	10.0

In present study, 26% students were in 17-19 years and 66% were in 20-22 years while 8% were 23-24 years age.30% of samples were male and 70% of samples were female student nurses.40% of students were studying in BSc nursing second year , 16% in BSc nursing third year and 44% in BSc Nursing fourth year respectively. BSc First year students were excluded from the study, as they do not have enough experience in the clinical area .90% student nurses residing in urban area and 10% coming from rural area

Table 2 Section B : Frequency and percentage distribution of level of Knowledge score on Intra venous cannula among student nurses n=50

Sr.no	Level of Knowledge	Frequency	Percentage(%)
1	Good	34	68
2	Average	12	24
3	Poor	4	8

The overall level of knowledge revealed that majority 68% had good knowledge, 24% had average knowledge and 8% had poor knowledge among student nurses.

Table 3:Section B :Frequency and percentage distribution of level of Practice score on Intra venous cannula among student nurses n=50

Sr.no	Level of Practice	Frequency	Percentage
1	Best	27	54
2	Good	16	32
3	Average	7	14

The overall practices score revealed that majority of 54% had best practices, 32% had good practices and 7% shown poor practices towards care of Intra venous cannula among student nurses.

Section C : Association of selected demographic variables with level of knowledge on Intra venous cannula care among student nurses n=50

Sr.No	Demographic variables	Level of significance
1.	Age * knowledge score	.163
2	Gender * knowledge score	.186
3	Education * knowledge score	.197
4	Residence * knowledge score	.101

None of the variables (like age, gender, education, residence) showed the association between the knowledge score.

Section D : Association of selected demographic variables with level of practice on Intra venous cannula care among student nurses n=50

Sr.No	Demographic Variable	Level of significance
1.	Age * Practice score	.045
2.	Gender * Practice score	.046
3.	Education * Practice score	.003
4.	Residence * Practice score	.250

Education of the studentsi.e year of the students and knowledge showed the correlation between the practice. In this study second and third year B.Sc nursing students participated in the study. So level of education have significant association with practice score.

Discussion

The study revealed that majority of student nurses had good knowledge, 24% had average knowledge and 4% had poor knowledge among student nurses. The overall practices score revealed that majority of 54% had best practices, 32% had good practices and 7% shown poor practices towards care of Intra venous cannula among student nurses .The demographic variable of age, gender and education had shown statically significant association with the level of practice towards care of Intra venous cannula among student nurses. There is no association between the demographic variables and knowledge score towards care of Intra venous cannula among student nurses[6]

Student and staff nurses need to reread the IV cannulation steps and maintenance algorithm to empower the knowledge in them. The clinical standard should be improved with the help of clinical IV maintenance algorithms or defined care protocols for IV assessment monitoring and/or management of IV fluid[7].

Conclusion

The findings revealed that 54% respondents were doing correct practices and only 6% shown poor practices in IV cannulation. Most student nurses (68%) has good knowledge of caring and maintaining IV cannulation but there were some (8%) without proper knowledge. None of the demographic variables and scores of knowledge and practice has an association except education and the practice score. Education and practice score showed the significant relation. 6-8% of total sample expressed poor practices and knowledge . Anyhow this can be dangerous also as student nurses are dealing with patients in hospital. Further education need to be given to the student nurses before practicing on patients[8].

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Conflict of Interest: None declared

Ethical considerations: Approval was obtained from Institution Research Ethical and approval Committee. Formal Permission was obtained from the Principal. Indira College of Nursing and also permission was obtained from the selected Hospital of Thiruvallur. Informed written consent was obtained from the student nurses that confidentially, privacy would be maintain, no harm will be inflicted on them, and they can drop out the study anytime if they feel so.

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