

A Study To Assess The Perception Of Risk Factors For Infusion Phlebitis Among Staff Nurses

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ABSTRACT

Intravenous fluid therapy is the most common invasive procedure in the hospital and more than 90% of patients receive IV therapies through intravenous device. Patient with infusion phlebitis may experience more pain, redness, swelling which leads to longer recovery and extended stays in the hospitals. Most common patient-related risk factors include: age, gender, and associated diseases. Incidence of phlebitis increases with age; with most studies showing that obvious signs of phlebitis were present in approximately 50% of patients over the age of 60. Although most studies suggest that phlebitis is more prevalent in women, there is still no satisfactory explanation for such findings. Furthermore, conditions that impair circulation (e.g., peripheral vascular disease, and smoking status), and conditions that cause lack of sensation (peripheral neuropathy) increase the risk of phlebitis. Other associated diseases, especially diabetes, can contribute significantly to the occurrence of phlebitis.

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INTRODUCTION

Intravenous fluid therapy is the most common invasive procedure in the hospital and more than 90% of patients receive IV therapies through intravenous device. Patient with infusion phlebitis may experience more pain, redness, swelling which leads to longer recovery and extended stays in the hospitals. Most common patient-related risk factors include: age, gender, and associated diseases. Incidence of phlebitis increases with age; with most studies showing that obvious signs of phlebitis were present in approximately 50% of patients over the age of 60. Although most studies suggest that phlebitis is more prevalent in women, there is still no satisfactory explanation for such findings. Furthermore, conditions that impair circulation (e.g., peripheral vascular disease, and smoking status), and conditions that cause lack of sensation (peripheral neuropathy) increase the risk of phlebitis. Other associated diseases, especially diabetes, can contribute significantly to the occurrence of phlebitis.

Phlebitis has been recognized that most common local complications of IV therapy administered specially through a peripheral IV cannulation (Phillips and Gorski, 2014; Bernatchez, 2014; Milutinovic et al, 2015; Erdogan and Denat, 2016). Incidence rate of phlebitis in the literature varies. It has been reported to be 31.4 percentage in India (Mandal and Raghu, 2019), 61.5 percentage in Portugal (Rego Furtado, 2011a; 2011b) and 31percentage in China (Luyu and Zhang, 2019). The People aged over 60 years and females have an increased risk of developing phlebitis and site of insertion and size of catheter used have also been factors in phlebitis development (Mandal and Raghu, 2019). Risk factors for phlebitis due to peripheral IV therapy are classified into four groups: cannula-related, patient-related, drug-related and healthcare-related (Milutinovic et al, 2015). Improper cannula size and location, pharmacological properties (solution osmolality ,pH), presence of associated diseases in patients and poor aseptic techniques can be increased the risk (Milutinovic et al, 2015; Li et al, 2016). Other risk factors are include patients' age, weight, duration of IV therapy and prolonged immobility (Nabili and Shiel, 2019).The Phlebitis is inflammation of the tunica intima of the vein which is caused by chemical, mechanical, or bacterial factors. The symptoms include pain, redness (erythema) , oedema (swelling), induration (hardened mass or formation), palpable venous cord, and pyrexia (Higginson and Parry, 2011; Sar et al, 2016).The Phlebitis are having the complications include bacteraemia, increasing pain, a slower recovery, extended hospital stays of patient, and increased healthcare costs (Webster et al, 2015). Nurse's care and responsibilities in IV therapy include initiating, monitoring, maintaining and discontinuing IV infusion. Nurses must be competent in all the aspects of IV therapy, including recognizing and working to prevent the phlebitis.



Fig1: Adam. Inc. Superficial Phlebitis nefaneem. Jimdo.com

NEED FOR THE STUDY

Many studies have been published recently about risk factors of Phlebitis and evidence suggests that Nurse’s knowledge of infusion phlebitis and risk factors may influence the risk for infusion phlebitis in hospitals. So the investigator performed the present study on Nurses perception of the risk factors for infusion phlebitis at selected hospital, Chennai.

OBJECTIVE OF THE STUDY

To assess the Nurse’s perception of risk factors for infusion phlebitis.

METHODS

This survey study was carried out from Feb to March 2021 in the selected hospital, Chennai. Multi-specialty hospital is a large tertiary hospital with 700 beds. The setting of the study includes ICU, Surgical, Casualty and maternity departments by convenience sampling method about 70 nurses were provided informed consent and Structured self-assessment questionnaire on perception of risk factors for infusion phlebitis was developed after collecting the demographic variables. The duration of data collection was approximately 10-15 min. The tool validity and reliability was good and followed the ethical principles during the study.

DATA ANALYSIS

Table 1: Sample characteristics of nurses of selected hospital in Chennai.

		N-70
Demographic data	Age(Years)	N (%)
Age(Years)	a)20 to 30	39(56)
	b)31 to 40	13(18)
	c)41 to 50	18(26)
	d)51 to 60	0(0)
Gender	Male	5(7)
	Female	65(93)
Education	G.N.M	23(33)
	Basic Bsc/ P.C.Bsc	47(67)
	Post graduate Nursing	0(0)
Department	a)ICU	23(33)
	b)Post-operative ward	35(50)
	c)Casualty	5(7)
	d)Maternity	7(10)
Designation	Staff Nurse	33(47)
	Sr. Staff Nurse	12(17)
	Shift Incharge	22(31)
	Nursing Officer	3(5)
Experience	0 to 5 years	49(70)
	6 to 10 years	16(23)
	11 to 15 years	5(7)
	>16 years	0(0)

Table 1 depicts the frequency and percentage of the samples based on demographic variables such as age, gender, education, department, designation , experience among staff nurses.

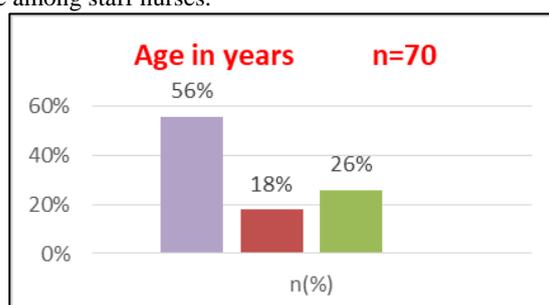


Fig 2 revealed that frequency and percentage distribution of age among staff nurses, 39 (56%) staff nurses belong to age

group of 20-30 years ,18(26%) belongs to 41-50 years and 13(18%) belongs to 31-40 years.

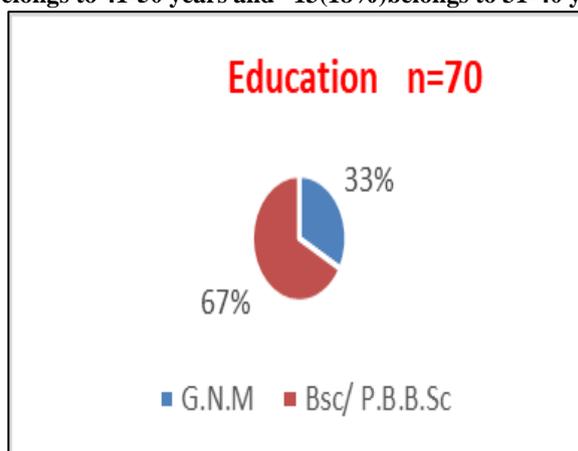


Fig-3 revealed that frequency and percentage distribution of education among staff nurses, 47(67%) completed B.Sc(N) / P.B.B.Sc and 23(33%) have completed GNM

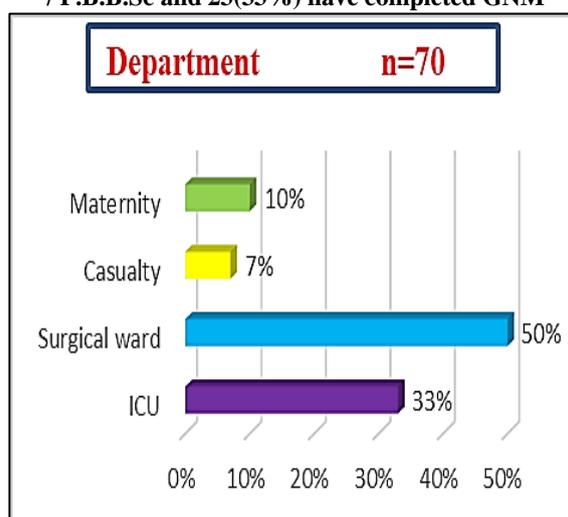


Fig-4 revealed that the percentage and frequency distribution of department among staff nurses, 35(50%) staff belongs to post-operative ward, 23(33%) staff belongs to ICU, 7 (10%) staff belongs to maternity department and 5(7%) belongs to casualty department.

Tab : 2 Frequency of perception on risk factors for phlebitis n=70

Structured Questions(I think)	Options	N (%)
Phlebitis is	Large problem	50(71)
	Medium problem	15(21)
	Small problem	5(8)
Flow rate of drug causes phlebitis(min)	100 mL/10-15	25(36)
	100 mL/16-30	13(18)
	100 mL/31-60	21(30)
	100 mL/>60	11(16)
IV catheter not be in place for longer than	24 hrs	0(0)
	48 hrs	13(19)
	72 hrs	57(81)
Skilled vein puncture decreases the risk	Yes	45(64)
	No	20(29)
	Do not know	5(7)
Dressing affects the risk for phlebitis	yes	53(76)
	No	7(10)

	Do not know	10(14)
Which fluid and drug factors do you think increase the risk for phlebitis	High pH	11(16)
	Low pH	20(29)
	High concentration	22(31)
	Low concentration	17(24)
Which qualities of the peripheral venous catheter do you think decrease the risk for phlebitis	Short catheter	36(51)
	Long catheter	12(18)
	Plastic catheter	22(31)
	Metal catheter	0(0)
Which sites do you think decreases the risk for phlebitis	Hand	23(33)
	Wrist	14(20)
	Forearm	23(33)
	Antecubital fossa	10(14)
In which infusion fluid do you dilute a vessel-irritating drug to decrease the risk for phlebitis	5% glucose	22(31)
	saline	25(35)
	sterile water	12(18)
	do not know	11(16)
Which factors do you think increases the risk for phlebitis	Male gender	13(19)
	Female gender	18(26)
	High age	22(31)
	Children	17(24)

Table-2 revealed that frequency and percentage of risk factors of phlebitis that almost 50 (71%) believed that phlebitis was a large problem and 15(21%) believed that was a medium problem and only 5(8%) believed that small problem. Other risk factors of phlebitis are flow rate 25(36%) especially high age 22(31%) and female gender 18(26 %) believed that prone to develop phlebitis. Skilled vein puncture 45(64%), site selection arms and wrist 23(33%) believed that decreases the risk factors of phlebitis.

DISCUSSION

The study revealed that almost all of the nurses believed that phlebitis was a large or medium problem. The results indicated that phlebitis is the most common side effect in clinical practice and the nurses have to pay enough attention to it. Skilled vein puncture and proper site selection can reduce the risk factors of developing phlebitis.

CONCLUSION

The recommended procedures for preventing infusion phlebitis were identified. In which improving the nurse's knowledge and skill through training regarding risk factors for infusion phlebitis is needed

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