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Assess the knowledge regarding blood transfusion among staff nurses and nursing students in NMCH, Nellore

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Abstract

The science of blood transfusion dates to the first decade of the 19th century, with the discovery of distinct blood types leading to the practice of mixing some blood from the donor and the receiver before the transfusion. In 1818, Dr. James Blundell, a British obstetrician, performed the first successful blood transfusion of human blood, for the treatment of postpartum hemorrhage.

World Health Organisation (WHO) states that a blood transfusion is the transfer of blood or blood products from one person (donor) to another person's bloodstream (recipient). This is usually done as a lifesaving maneuver to replace blood cells or blood products lost through severe bleeding, during Surgery when blood lost occur or to increase the blood count in an anemia patient.

Every year, nearly 5 million people in the United States receive life-saving blood transfusion. Blood is transfused either as a whole blood or part of blood such as Red Blood cells, platelets, and plasma. The Food and Drug administration and other organizations that collect blood make sure that blood is safe. Every single donation is tested for HIV/AIDS, hepatitis C, syphilis and several other diseases that can be transmitted through blood.

Methodology

Quantitative research approach was utilized to assess the knowledge regarding administration of Blood transfusion among the staff Nurses and nursing students in NMCH, Nellore. The sample size was 60, of the 30 were staff nurses and 30 were student nurses. Non-probability convenience sampling technique was used for selection. of subjects. Semi structured questionnaire was used to assess the knowledge of staff nurses and student nurses regarding administration of Blood transfusion

Results

Level of knowledge regarding jejunostomy feeding among staff nurses, 1(6.6%) had inadequate knowledge, 7(46.7%) had moderately adequate knowledge and 7(46.7%) had adequate knowledge. Shows that with regard to knowledge regarding jejunostomy feeding among nursing students, 1(6.7%) had inadequate knowledge, 9 (60%) had moderate knowledge and 5(33.3%) had adequate knowledge.

Conclusion

The study concluded that majority of staff nurses had moderately adequate knowledge when compare to nursing students.

Keywords: Assess the knowledge, blood transfusion, staff nurses

Introduction

Blood is a fluid tissue that circulates throughout the body via arteries and veins, providing a vehicle by which an immune variety of different substances are transported between the various organs and tissues. The blood transfusion refers to the process of administering whole blood or blood components to a patient through an intravenous needle or catheter placed in a vein.

Oldham J et al (2009) [3] stated that blood transfusion therapy can save and enhance patients' lives but careful consideration must be given to the associated dangers. Nurses must have the skills and knowledge required to care for patients receiving blood components. It is important for nurses to understand the correct and safe way to approach transfusion practice

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as it is a constant and central component of modern health care. The number of people eligible to donate blood is reducing and each blood component comes from a donation given in good faith: it is given voluntarily with the expectation that it will be used effectively for the benefit of patients. Therefore at every stage of the transfusion process the nurse is responsible for the part they play in making sure that the correct patient receives the correct blood and also that blood components are used and handled with care. This article examines the key principles and practicalities to be considered in day-to-day practice. Areas covered include legal obligations, appropriate handling of blood components, the different elements of the transfusion process, recognition and management of transfusion reactions and education. A key theme running throughout is the management of clinical risk.

Statement of the Problem

A study to assess the knowledge regarding administration of blood transfusion among staff nurses and nursing students in NMCH, Nellore.

Objectives

- To assess the level of knowledge regarding blood transfusion among staff nurses.
- To assess the level of knowledge regarding blood transfusion among student nurses.
- To compare the level of knowledge between staff nurses and student nurses regarding blood transfusion
- To find out the association between the knowledge regarding blood transfusion among staff nurse with socio demographical variables.
- To find out the association between knowledge regarding blood transfusion among students with socio demographical variables.

Assumptions

The staff nurse and nursing students have some knowledge regarding administration of blood transfusion.

Materials and Methods

Quantitative research approach was utilized to assess the knowledge regarding administration of blood transfusion among the staff Nurses and nursing students in NMCH, Nellore. The sample size was 60, of the 30 were staff nurses and 30 were student nurses. Non-probability convenience sampling technique was used for selection of subjects. Semi structured questionnaire was used to assess the knowledge of staff nurses and student nurses regarding administration of intravenous fluid.

Criteria for Sample Selection

Inclusion Criteria

1. Staff nurses who are available at the time of data collection
2. Nurses who know well English
3. Student nurses who are available at the time of data collection

Exclusion Criteria

1. Nurses who are excluded based on the following criteria
2. Nurses who are not willing to participate in this study
3. Nurses who are on leave

Description of the Tool

The tool consists of two parts.

PART-I.

Deal with demographic data

Demographic variables including Age, education, occupation, income, place of residence, religion, type of family, sources of information,

PART II.

Deals with knowledge questionnaire to assess the knowledge regarding administration of intravenous fluid.

Score Interpretation

S. No	Level Of Knowledge	Score	Percentage
1.	Inadequate knowledge	0-12	<50%
2.	Moderately adequate knowledge	13-24	51-69%
3.	Adequate knowledge	25-36	>70%

Data Collection Procedure

The data collection procedure was done for a period of 1 week from 5/5/15 to 10/5/15. After obtaining the formal permission from the Narayana College of nursing, 30 samples were selected by non probability convenience sampling techniques. Nursing students and staff nurses, who fulfilled the inclusion criteria, were included for this study after obtaining informed consent from them and the confidentiality of shared was assured. For the present study knowledge questionnaire based interview method was adopted to collect the data, it took 30 minutes to complete the questionnaire for staff nurses and nursing student.

Plan for Data Analysis

Data analysis was done using descriptive statistics and inferential statistics.

Descriptive statistics:

- frequency and percentage distribution of demographic variables
- Mean & standard deviation

Inferential statistics

- Chi-square test to find association with knowledge of mothers.

Results

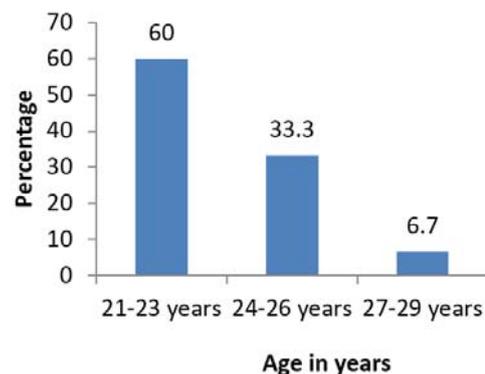


Fig 1: Percentage distribution of staff nurse based on age.

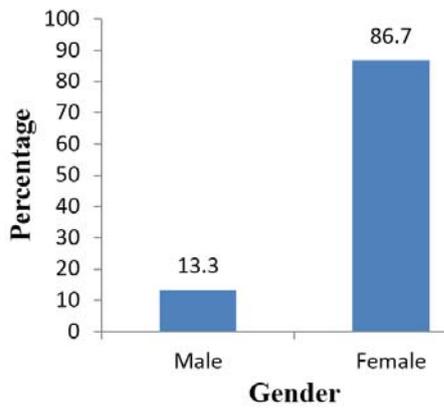


Fig 2: Percentage distribution of staff nurse based on gender.

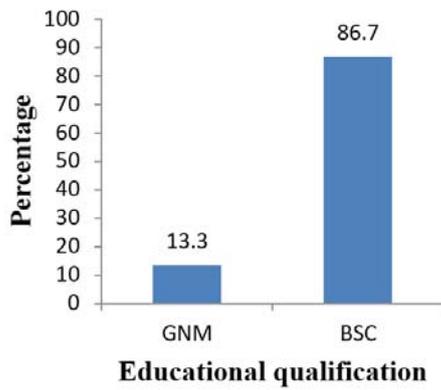


Fig 3: Percentage distribution of staff nurses based on Educational qualification.

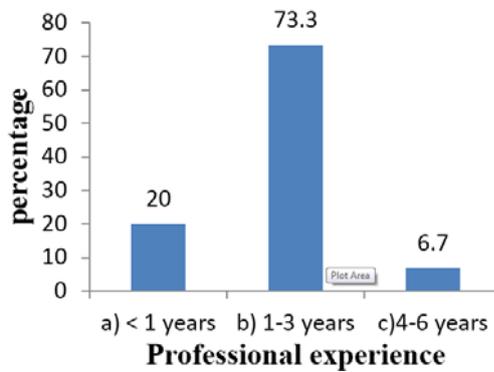


Fig 4: Percentage distributions of staff nurses based on professional experiences.

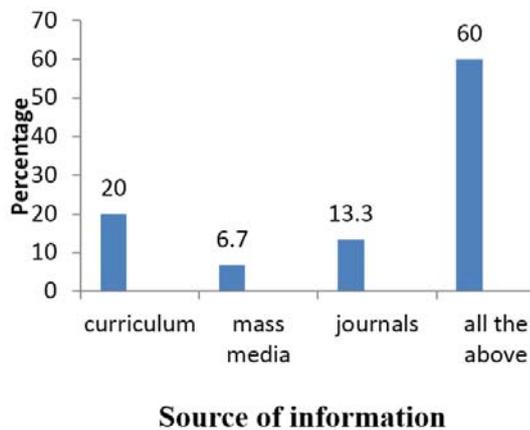


Fig 5: Percentage distributions of staff nurses based on Source of information.

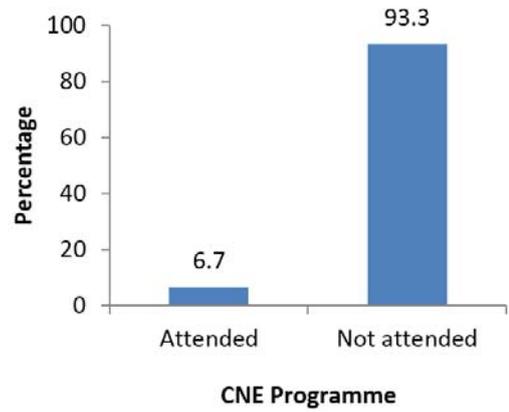


Fig 6: Percentage distribution of staff nurses who attended CNE related administration of Blood transfusion Frequency and percentage distribution of demographic variables of nursing students.

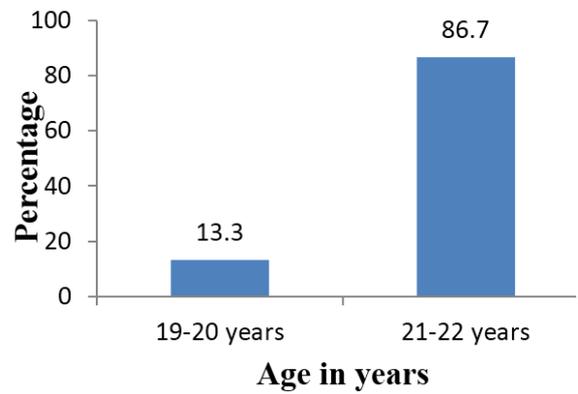


Fig 7: Percentage distribution of nursing students based on Age.

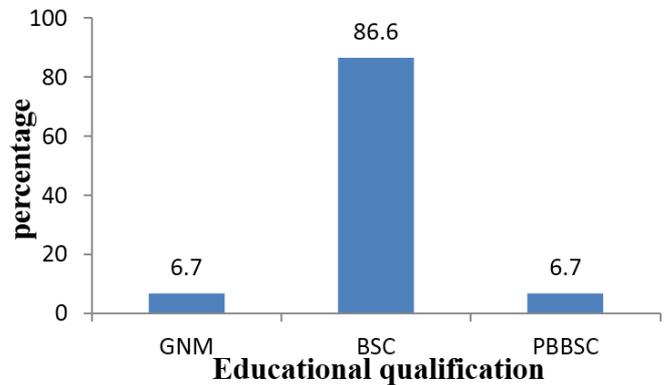


Fig 8: Percentage distribution of nursing students based on year of educational qualification.

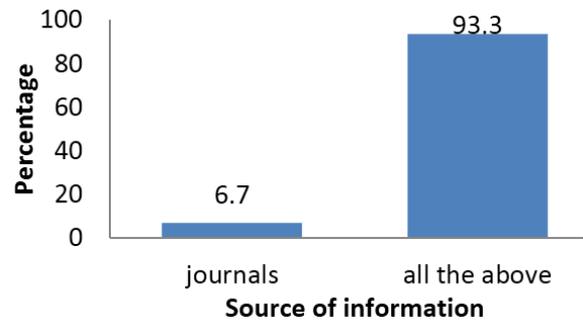


Fig 9: Percentage distribution of nursing students based on source of information.

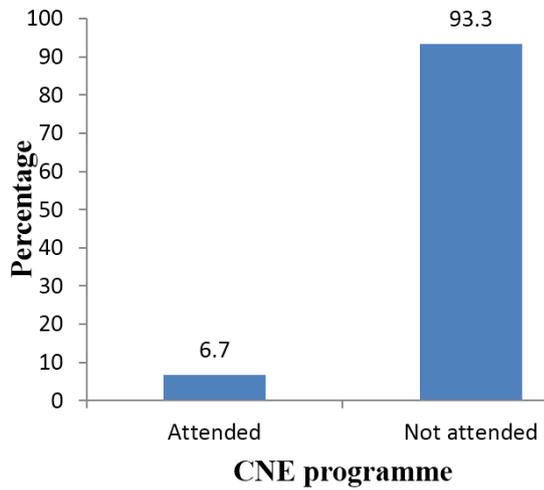


Fig 10: Percentage distribution of nursing students based on attended CNE program.

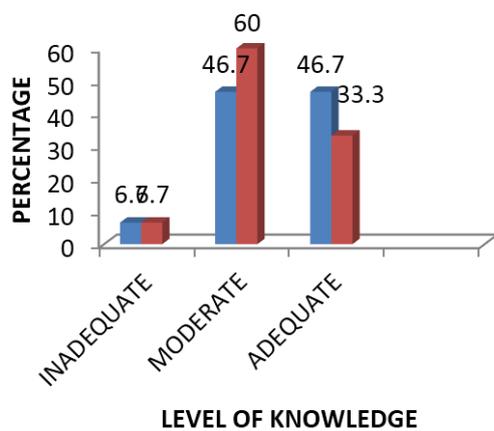


Fig 11: Comparison of level of knowledge regarding administration of Blood transfusion between staff nurses and nursing students.

Section-III

Table 1: Comparison of mean knowledge score and standard deviation between staff nurses and nursing students.

Group	Mean	Standard Deviation
Staff nurses	23.6	3.0
Nursing students	22.2	3.4

Association between the level of knowledge regarding blood transfusion among staff nurses and nursing students with their socio demographic variables.

s.no	Demographic variables	INADEQUATE		MODERATELY ADEQUATE		ADEQUATE		CHI-SQUARE
		f	%	f	%	f	%	
1.	Age							C=4.19 T=9.49 df=2 NS P=0.05
	a. 21-23 yrs	1	6.7	5	33.3	3	20	
	b. 24-28 yrs	-	-	1	6.7	4	26.6	
	c. 27-29 yrs	-	-	1	6.7	-	-	
2.	Professional experience							C=3.816 T=9.49 df=2 NS P=0.05
	a. <1year	1	6.7	5	33.3	5	33.3	
	b. 1-3 yrs	-	-	1	6.7	-	-	
	c. 4-6 yrs	-	-	-	-	-	-	

Association between the level of knowledge and socio demographic variables of student nurses

S.NO	DEMOGRAPHIC VARIABLES	INADEQUATE		MODERATELY ADEQUATE		ADEQUATE		CHISQUARE
		f	%	f	%	f	%	
1.	Age							C=7.385 T=5.99 df=2 S* P=0.05
	a. 19-20 yrs	1	6.7	1	6.7	-	-	
	b. 21-22 yrs	-	-	8	53.3	5	33.	
2.	Source of information							C=0.66 T=5.99 df=2 NS P=0.05
	a. Journal	-	-	1	6.7	-	-	
	b. All the above	1	6.7	8	53.3	5	53.3	

Description of demographic variables of staff nurses:- Shows that with regard to age of staff nurses, 1(6.7%) are between 21-23years, with regard to gender all the, 13 (86.7%) are females nurses, with regard to educational qualification of staff nurses, 8 (53.7%) studied BSc (n), with regard to year of experience, 11(73.3%) had 1 year, with regard to source of information 9(60%) received from different sources, with regard to attended CNE programme 5 14 (93.3%) have not attended the CNE program.

Description of demographic variables of nursing students.

with regard to age, 13 (86.7%) are 21-22 years, with regard to educational status of the nursing students, 13 (86.66%) are studying BSC nursing, with regard to source of information, 14 (93.3%) received from different sources, with regard to attended workshop, 14 (93%) have not attended.

Findings of the Study Based On Objectives

The level of knowledge regarding administration of Blood transfusion among staff nurse.

FIG 11: shows among 15 sample of staff nurses, 1(6.6%) have inadequate knowledge regarding administration of blood transfusion 7 (46.7%) have moderately adequate knowledge regarding administration of blood transfusion and, 7 (46.67%) have adequate knowledge regarding administration of blood transfusion.

Sailleur-Glenisson F *et al* (2002) [5]: conducted a study to describe knowledge, attitudes, and reported practice of blood transfusion of nurses in Aquitaine's hospitals; measure the potential threat for patient safety of poor transfusion-related knowledge and practice; and identify factors associated with poor knowledge and practice. A survey was conducted in 14 hospitals in Aquitaine (one university and 13 general hospitals). Random samples of nurses were selected for the study and data were collected anonymously by investigators through structured individual interviews. Finding showed that in their sample of 1090 nurses, poor knowledge and practice concerned mainly the bedside blood compatibility test [proportion of responses (PR) with potential life threat between 12.7 and 35.5%]; pre-transfusion compatibility check when receiving blood units (PR = 34.5%); delay between screening of red cell antibodies and transfusion (PR = 20.5%); delay in

preservation of blood unit in the ward (PR = 33.4%); and recognition of abnormal reactions after transfusion (PR = 47.1%). Frequency of transfusion and training were the factors most strongly associated with hazardous knowledge and practice scores. It was concluded that low training and transfusion activity were key determinants of poor transfusion-related knowledge and practice.

The level of knowledge regarding administration of Blood transfusion among nursing students in NMCH, Nellore

shows among 15 sample of nursing students 1(6.7%) have inadequate knowledge regarding administration of blood transfusion, 9(60%) have moderately adequate knowledge regarding administration of blood transfusion and, 5(33.3%) have adequate knowledge regarding administration of blood transfusion

Ali Reza Piri, Vahed Aziz Shaharaki (2009) [9]:

Conducted a descriptive study to assess the knowledge of health workers about proper methods of blood transfusion and how to promote their knowledge for proper performance if their knowledge is inadequate. The data were collected with aimed questionnaire and analysed by statistics software. Their sample size was 122. The main findings from this study showed that 26.2% of health care workers had low level knowledge, 22.1% moderate and 51.6% acceptable knowledge "the study concluded that results strongly emphasized the need for curriculum to promote knowledge of health care workers about blood transfusion and suggest that more attempts should be made to build up knowledge about blood transfusion.

The association between the level of knowledge of administration of blood transfusion staff nurses and selected socio demographic variables.

The age, Gender, Educational qualification, source of information, professional experience, attended any CNE programme shows non-significant association with level of knowledge regarding administration of blood transfusion.

Pirie ES and Gray MA (2007): conducted a study on exploring the assessors' and nurses' experience of formal assessment of clinical competency in the administration of blood components. A triangulated approach of phenomenology and survey was used. The tool was piloted in two different clinical settings by four registered nurses who each assessed two nurses. Individual semi-structured interviews were conducted to collate the nurses' and the assessors' experience of the process. The study participants were of the opinion that assessing clinical competency using a criterion-referenced tool gave practitioners the opportunity to relate theory to practice, promote best practice and encourage adherence to hospital transfusion policies. Formal assessment of clinical competency is therefore, a vehicle that could be used to promote safe transfusion practice, ensuring the safety of patients is paramount.

The association between the level of knowledge of nursing students regarding administration of blood transfusion and selected socio demographic variables.

The findings of the study is Shows that association of level of knowledge with socio demographic variable, such as age has obtained Chi square value of 7.385 with table value of

5.99 show significant at $p < 0.05$. The educational qualification, source of information and attended any workshop knowledge shows no significant association with level of knowledge regarding blood transfusion.

R.N Makroo. et al (2009) [10]: conducted a Retrospective study in medical intensive care unit of a tertiary care hospital in New Delhi with an objective to investigate current transfusion practice in the critically ill patients. The result of the study was that Nine hundred and eleven (50.1%) critically ill patients, comprising 71.6% males and 28.4% females, received blood/blood components. Out of this about 21.4% of PRC, 14.5% of FFP, and 19% of platelets were inappropriately indicated. In conclusion the Clinicians in this centre were conservative in keeping with recent transfusion guidelines. A significant number of blood request forms were still incomplete with baseline investigations not mentioned in the request forms.

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