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## Assess the knowledge regarding administration of intravenous fluid among staff nurses and nursing students in NMCH, Nellore

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### Abstract

Fluid and electrolytes are vital to life and adequate balance is imperative to maintain every cellular reaction and function. Chemical reaction that occur in the body depend up on a careful acid-base balance. Body water constitutes approximately 50 to 56% of total body weight in adult women. 60% in adult men and 77% in newborn infants.

Total body water is distributed between two compartments, the intracellular fluid compartment and the extracellular fluid compartment. Most body water is intracellular accounting for 55-75% of total body weight. The remains 25-45% of total body weight is distributed in the extracellular fluid compartment.

**Methodology:** Quantitative research approach was utilized to assess the knowledge regarding administration of intravenous fluid 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

**Results:** Level of knowledge regarding jejunostomy feeding among staff nurses, 2(13.3%) had inadequate knowledge, 6(40%) had moderately adequate knowledge and 7(46.7%) had adequate knowledge. Shows that with regard to knowledge regarding jejunostomy feeding among nursing students, 2(13.3%) had inadequate knowledge, 8 (53.3%) had moderate knowledge and 5(33.4%) had adequate knowledge.

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

**Keywords:** administration, intravenous fluid, Non-probability convenience

### Introduction

Body fluid contain water, electrolytes and non-electrolytes. Water has several functions in the body including transportation of oxygen, electrolytes and nutrients to the cells and regulation of body temperature. Non electrolytes are solutes such as glucose and urea. Electrolytes are maintenance of body fluid osmolality, regulation of acid base balance.

The administration of intravenous fluid may be necessary for the client experiencing imbalances in hydration as well as electrolyte and acid base balances. The purposes of iv fluid administration are provision of maintained of requirements of fluid and electrolytes, replacement of previous losses of fluid and electrolytes, provision of nutrition in cases in which nutritional needs cannot be met orally provision of a means for administration of medication and the transfusion of blood and blood compartments

Intravenous fluid may be classified according to their tonicity as well as their composition and use. All IV solution contain solute particles including electrolytes or non ionizable particles such as urea or glucose. I've solution may be isotonic, hypotonic or hypertonic depending on their concentration of anions' and cat ions in comparison with extracellular fluid. To compute the number of drops to be administered per minute. The drop factor is the number of drops of intravenous selections necessary to deliver 1ml of fluid. Macro drip sets

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Are IV sets that deliver large drops (10, 15, 20 gtt/ml). Micro drip sets (minidrip set) are IV sets that deliver small drops (60gtt/hr). M.S. Asuku (2014) conducted a retrospective cohort study to assess the knowledge regarding administration of intravenous fluid in adult hospital among health work in National clinical child line center in (UK). The sample technique is simple random method and he got the sample size is 100 health workers. The results shows that 30% have adequate knowledge regarding administration of intravenous fluid and 40% have moderate knowledge and 28.5% have high skill knowledge regarding administration of intravenous fluid. Hence the researcher concluded that according to practice level the knowledge level will improved.

**Statement of the Problem**

A Study to Assess the Knowledge Regarding Administration of Intravenous Fluid among Staff Nurses and Nursing Students in Nmch, Nellore.

**Objectives**

- To assess the level of knowledge regarding administration intravenous fluid among staff nurses.
- To assess the level of knowledge regarding administration intravenous fluid among nursing students
- To compare the level of knowledge between staff nurses and nursing students regarding administration intravenous fluid
- To find out association between the levels of knowledge regarding administration intravenous fluid among staff nurse with their selected demographic variables.
- To find out the association between the level of knowledge regarding administration intravenous fluid among nursing students with their selected demographic variables.

**Assumptions**

The staff nurse and nursing students have some knowledge regarding administration of intravenous fluid.

**Materials and Methods**

Quantitative research approach was utilized to assess the knowledge regarding administration of intravenous fluid 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, habits

**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	51-70%
3.	Adequate knowledge	25-36	>71%

**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.

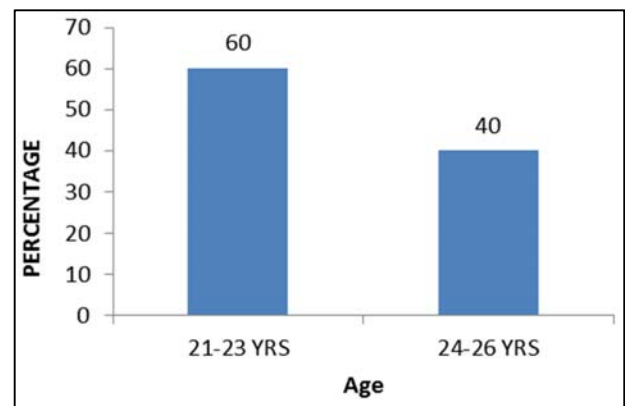
**Descriptive statistics**

- 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.

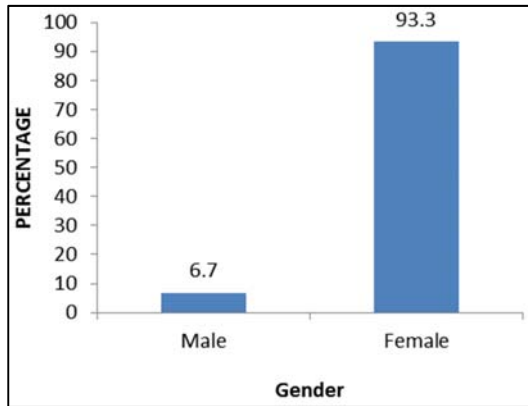


Fig 2: Percentage distribution of staff nurse based on gender.

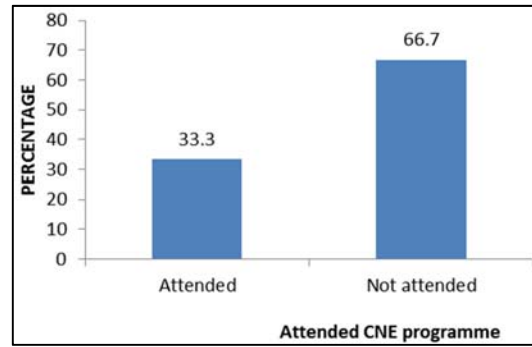


Fig 6: Percentage distribution of staff nurses who attended CNE related administration of I.V fluids Frequency and percentage distribution of demographic variables of nursing students.

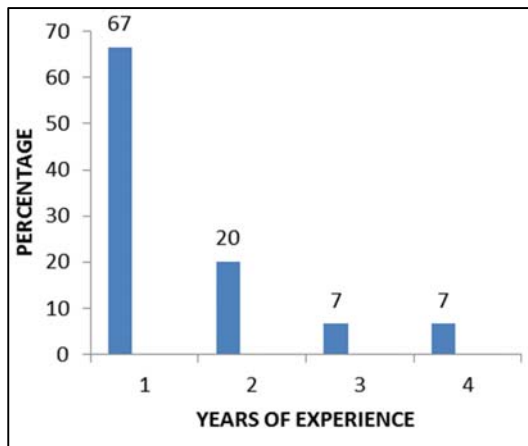


Fig 3: Percentage distribution of staff nurses based on Educational qualification.

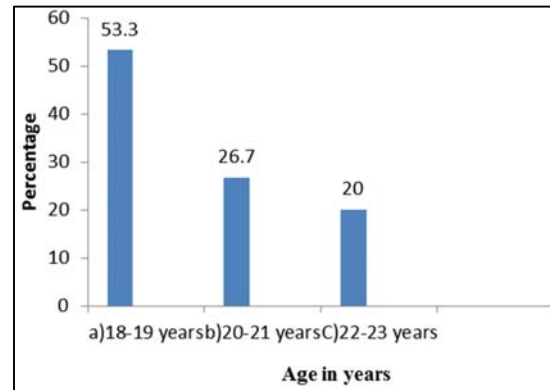


Fig 7: Percentage distribution of nursing students based on Age.

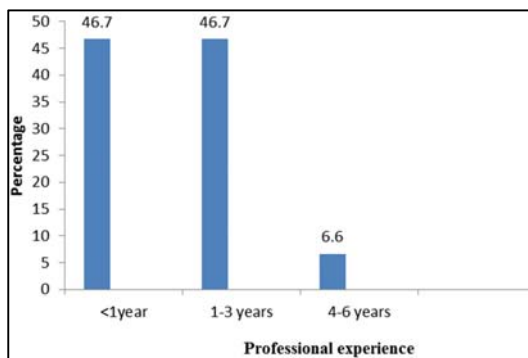


Fig 4: Percentage distributions of staff nurses based on professional experiences.

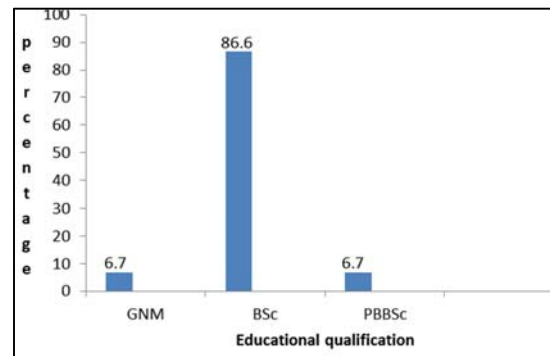


Fig 8: Percentage distribution of nursing students based on year of educational qualification.

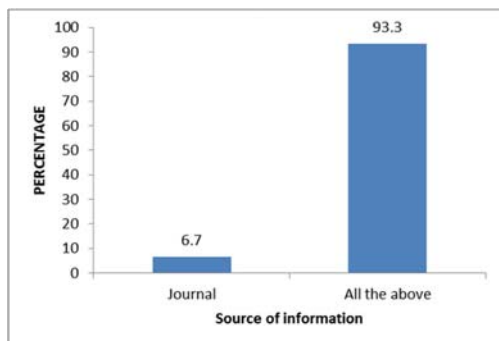


Fig 5: Percentage distributions of staff nurses based on Source of information.

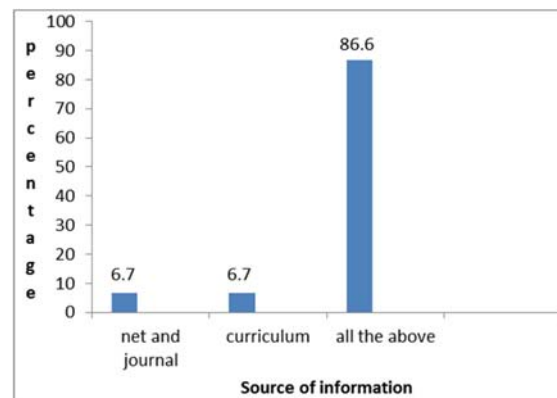


Fig 9: Percentage distribution of nursing students based on source of information.

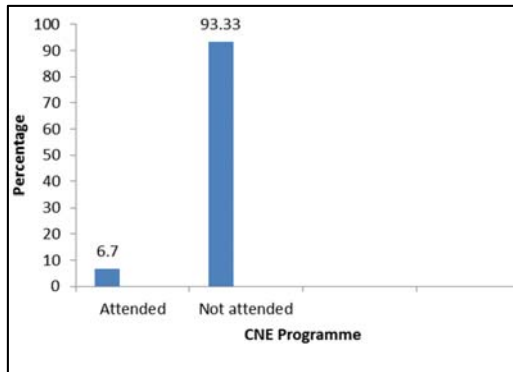


Fig 10: Percentage distribution of nursing students based on attended CNE program.

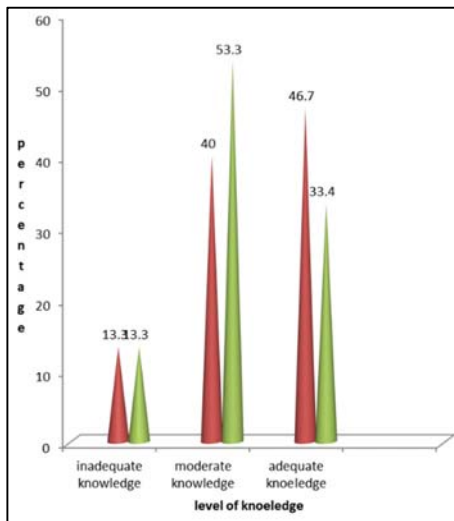


Fig 11: Comparison of level of knowledge regarding administration of I.V fluids between staff nurses and nursing students.

SECTION-III

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

Group	Mean	Standard Deviation
Staff nurses	20.8	4.3
Nursing students	20.3	4.11

Association between the level of knowledge and socio demographic variables of staff nurses (n=15)

Age in years	Inadequate	Moderate	Adequate	Total
a)21-23 years	-	5	4	9
b)24-26 years	2	1	3	6
<b>Total</b>	<b>2</b>	<b>6</b>	<b>7</b>	<b>15</b>

Chi-Square Test: Cv=4.38, T=4.30, df=2, S\*, P=0.05

Professional experience	Inadequate	Moderate	Adequate	Total
a)Below 1 year	2	1	4	7
b)1-3 years	-	6	3	9
c)4-6years	-	-	-	0
<b>Total</b>	<b>2</b>	<b>7</b>	<b>7</b>	<b>16</b>

Chi-Square Test: Cv=5.39, T=2.78, df=4, S\*, P=0.05

Association between the Level of Knowledge of Nursing Students Regarding Administration of Intravenous Fluid and Selected Socio Demographic Variables.

DEMOGRAPHIC VARIABLES	INADEQUATE		MODERATELY ADEQUATE		ADEQUATE		CHI-SQUARE
	f	%	f	%	f	%	
<b>Source of information</b>	-	-	1	6.7	-	-	Cv=2.80, T=2.78, df=4, S*, P=0.05
b)net and journal	2	13.3	7	4.6	4	26.6	
c) Curriculum	-	-	-	-	1	6.7	
d)all the above	-	-	-	-	4	26.6	
<b>Educational qualification</b>	-	-	1	6.7	-	-	Cv=2.80, T=2.78, df=4, S*, P=0.05
a)GNM	-	-	-	-	1	6.7	
c)BSC	-	-	-	-	-	-	
d)PBBSC	2	13.3	7	4.6	4	26.6	

Description of demographic variables of staff nurses:- Shows that with regard to age of staff nurses, 9(60%) are between 21-23years,with regard to gender all the, 14(93.33%) are females nurses, with regard to educational qualification of staff nurses, 13(86.67%) studied BSc (n),with regard to year of experience, 7 (646.7%) had 1 year, with regard to source of information 10(66.7%) received from curriculum, with regard to attended CNE programme5 (33.33%) have not attended the CNE program.

Description of demographic variables of nursing students.

with regard to age, 8(53.3%) are 18-19 years, with regard to educational status of the nursing students, 13(86.66%) are studying 3rd year BSC nursing, with regard to source of information, 13(86.6%) received from curriculum, with regard to attended workshop, 14(93%) have not attended.

Findings of the Study Based On Objectives

The level of knowledge regarding administration of intravenous fluid among staff nurse.

FIG 11: shows among 15 sample of staff nurses, 2(13.33%) have inadequate knowledge regarding administration of intravenous fluid 6(40%) have moderately adequate knowledge regarding administration of intravenous fluid and, 7(46.67%) have adequate knowledge regarding administration of intravenous fluid.

Hawkins (2013) conducted retrospective cohort study of intravenous fluid administration associated with venous thrombosis in children at North Carolina and he used the sample size is 50. The results shows that 27.6% children have improper fluid administration and 30% have in corrected fluid volume level and 40% have in corrected fluid volume calculation. Hence the researcher concluded that improvement in knowledge and attention of health care worker about intravenous fluid administration among children it will prevent venous thrombosis in children.

The level of knowledge regarding administration of intravenous fluid among nursing students in NMCH, Nellore.

Shows among 15 sample of nursing students 2(13.33%) have inadequate knowledge regarding administration of intravenous fluid, 8(53.33%) have moderately adequate

knowledge regarding administration of intravenous fluid and, 5 (33.34%) have adequate knowledge regarding administration of intravenous fluid.

Nargis Ahamed (2014): conducted a descriptive survey to assess the knowledge regarding administration of intravenous fluid among staff nurses and nursing students in a selected hospital. 42 staff nurses are selected by random sampling method and questionnaire method were used to and result analyzed 31 staff nurses are moderate knowledge and 11 of having inadequate knowledge regarding administration of intravenous fluid. Hence the researcher concluded that nurse skill and knowledge developed performance and planning their train according to practice level.

**The association between the level of knowledge of administration of intravenous fluid staff nurses and selected socio demographic variables.**

The age, work experience, attended any CNE programme have significant association with level of knowledge of staff nurses regarding administration of intravenous fluid

Gender, Educational qualification, Source of information have non-significant association with level of knowledge of staff nurses regarding administration of intravenous fluid.

Hanna (2012) conducted a cross sectional Survey for incidence of hyponatremia after patient had been given hypotonic saline intravenous fluid at mission hospital in Benin city Nigeria, the sample technique was simple random method and he got the sample size is 50. The results shows that 49% receiving hypotonic solution and serum electrolyte value only collected 51%. Hence the researcher concluded that using hypotonic saline solution have risk for hyponatremia.

**The association between the level of knowledge of nursing students regarding administration of intravenous fluid and selected socio demographic variables.**

The source of information having significant association with level of knowledge regarding administration of intravenous fluid.

Gender, Educational qualification, attended any CNE Programme had non-significant association with level of knowledge of nursing students regarding administration of intravenous fluid. (P=0.05)

M.S. Asuku (2014): conducted a retrospective cohort study to assess the knowledge regarding administration of intravenous fluid in adult hospital among health work in National clinical child line center in (UK). The sample technique is simple random method and he got the sample size is 100 health workers. The results shows that 30% have adequate knowledge regarding administration of intravenous fluid and 40% have moderate knowledge and 28.5% have high skill knowledge regarding administration of intravenous fluid. Hence the researcher concluded that according to practice level the knowledge level will improved.

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