RESEARCH
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A STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWNLEDGE REGARDING ET TUBE SUCTIONING AMONG NICU STAFF NURSES IN SELECTED HOSPITAL AT GWALIOR MADHYA PRADESH

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Abstract
Breathing is important aspect of life for two reasons. First function of breathing is that it is the only means to supply our bodies and its various organs with the supply of oxygen which is vital for our survival. The second function of breathing is that it is one means to get rid of waste products and toxins from the body. For good breathing airway patency is necessary.
In respiratory system, the upper airway includes the nose, mouth, and pharynx which have several vital functions like, it act as a conduction system for inspired gases to th lungs; it filters to prevent foreign material from entering the lower airway, humidifying and heating inspired gases.
The study was conducted to assess the effectiveness of a structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses in selected Hospital at Gwalior (M.P)".
The objectives of the study were

1. To assess the pre test and post test knowledge regarding ET tube suctioning among NICU staff nurses.
2. To assess the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses
3. To find out the association between pre test knowledge on ET tube suctioning among NICU staff nurses. with their selected demographic variables

Conceptual framework model for the present study was based on General system theory by Ludwig Von Bertalanffy (1968)
Pre experimental one group pre test and post test research design was utilized to assess the level of knowledge regarding ET tube suctioning among NICU staff nurses where subjects were selected by convenient sampling.
The reliability of the tool was calculated using Karl Pearson methods. The tool was found to be reliable (r=0.7) for data collection.
The data was collected after taking formal approval from principal of Institite of Nursing Science studies and Research ITM University , Gwalior (M.P) Purpose of the study was explained to the group and confidentiality was assured. The data collected was analyzed using descriptive and inferential statistics in terms of frequency, mean, standard deviation, and associated by chi square test.
The findings related to pre test and post test knowledge score of NICU staff nurse regarding ET tube suctioning. In pre-test, 6(10%) are had poor knowledge score, 11(18.3%) are had average knowledge score, 43(71.7%) are had good knowledge score. In pre test poor knowledge score mean is 8.5, mean score percentage is 14.1%, SD(0.9), in average knowledge score mean is 17.3, mean score percentage is 28.8, SD(3.5), in good knowledge score mean is 16.1, mean score percentage is 26.8, SD(6.6). Whereas in post test 60(100%) nursing staffs are having good knowledge score In post test good knowledge score mean is 24.7, mean score percentage is 41.4%, SD(2.1).
Keyword: Assess, Effectiveness, Structured teaching, knowledge, ET tube suctioning, NICU staff nurse.

INTRODUCTION

"For breath is life, and if you breathe well you will live long on earth."

~Sanskrit Proverb

We live in an ocean of air like fish in a body of water. By our breathing we areattuned to our atmosphere. If we inhibit our breathing we isolate ourselves from themedium in which we exist. In all Oriental and mystic philosophies, the breath holdsthe secret to the highest bliss.

~Alexander Lowen

STATEMENT OF PROBLEM

"A study to assess the effectiveness of a structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses in selected Hospital at Gwalior (M.P)".

OBJECTIVES OF THE STUDY

1. To assess the pre test and post test knowledge regarding ET tube suctioning among NICU staff nurses.
2. To assess the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses
3. To find out the association between pre test knowledge on ET tube suctioning among NICU staff nurses. with their selected demographic variables.

RESEARCH METHODOLOGY

Methodology is an important part of research, as it forms a framework for conducting a study. The general pattern for organizing the procedures in order to gather valid and reliable data for investigation can only be carried out through methodology.

According to Polit and Beck (2014) "Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. The methodology of research indicates a general pattern for organizing the procedure of gathering valid and reliable dates for an investigation. This chapter deals with the methodology adopted to assess the effectiveness of structured teaching programme on Knowledge regarding ET tube suctioning among NICU staff nurse in selected hospitals of Gwalior (M.P).

RESEARCH APPROACH

Polit and Beck (2008) "the investigation of phenomena, typically in an in-depth and holistic fashion, through the collection of rich narrative materials using a flexible research design"

The present study aimed at assess the Knowledge regarding ET tube suctioning among NICU staff nurse in selected hospitals of Gwalior (M.P). to accomplish the objectives of study a "Quantitative research approach" was used.

RESEARCH DESIGN

According to Green and Tull, (2010)" It is the specification of techniques and processes for obtaining the information required. It is the over-all operational pattern or framework of the project which states what data is to be gathered from which source by what processes."

"One group pre test and post test experimental" research design is used in the present

Study.

ORGANIZATION OF DATA

The data was organized under following section:-

- **Section I**:-Distribution of subjects according to demographic variables using frequency and percentage.
- **Section-II**:- Overall analysis of knowledge scores between pre test and post test by mean, mean score percentage and SD.
- **Section IV**: Analysis of the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses by using "t" test
- **Section V**: - Chi-square analysis to find out association between pre test knowledge scores with their selected socio-demographic variables.

✓ DISTRIBUTION OF SUBJECT ACCORDING TO SOCIO DEMOGRAPHIC VARIABLE BY USING FREQUENCY AND PERCENTAGE.

TABLE No. 1. Distribution of subjects according to Age
N=60

S.NO.	AGE (IN YEARS)	FREQUENCY (f)	PERCENTAGE (%)
1.	19-22	18	30
2.	23-25	22	36.6
3.	Above 25	20	33.3
	Total	**60**	**100**

Figure no. 3 Clustered column diagram showing the percentage distribution of the age groups. **Table 1 and figure 3,**It shows that majority of staffs 22 (36.6%) belonged to age group 23-25 years of age, 18(30%) were belongs to age group 19-22years of age, 20(33.3%) were belongs to above 25 years of age.

TABLE No. 2 Distribution of subjects according to Type of family
N= 60

S.NO	TYPE OF FAMILY	FREQUENCY (f)	PERCENTAGE (%)
1.	Joint	22	36.6
2.	Nuclear	38	63.4
	Total	60	100

Fig no 4 Pie diagram showing percentage distribution of sample according to type of family. **Table 2 and figure 4:** It shows majority of staffs38(63.4%) were belongs to nuclear family, and 22(36.6%) minimum were belongs to joint family.

TABLE No. 3 Distribution of subjects according to religion
N= 60

S.NO	RELIGION	FREQUENCY (f)	PERCENTAGE (%)
1.	Hindu	12	20
2.	Muslim	9	16.6
3.	Christian	34	53.6
4.	Others	5	10
	Total	**60**	**100**

Figure no. 5 Column diagram showing according to religion

Table 3 and figure 5: It shows that majority of staffs 34(56.6%) were Christian, 12(20%) were Hindu 9(15%) were Muslim and 5(8.34%) were others.

TABLE No. 4 Distribution of subjects according to gender
N= 60

S.NO	GENDER	FREQUENCY (f)	PERCENTAGE (%)
1.	Female	40	66.6
2.	Male	20	33.4
	Total	60	100

Fig no 6 Bar diagram showing percentage distribution of sample according to Gender. **Table 4 and figure 6:** It shows majority of staffs 40(66.6%) were female, and 20(33.4%) minimum were male.

TABLE No. 5 Distribution of subjects according to Educational qualification
N= 60

S.NO	EDUCATIONAL QUALIFICATION	FREQUENCY (f)	PERCENTAGE (%)
1.	GNM	34	56.6
2.	B.sc Nursing	12	20
3.	M.sc Nursing	5	8.3
4.	PB BSc Nursing	9	15
	Total	60	100

Fig no 7 Stacked column diagram showing percentage distribution of sample according to Educational qualification.
Table 5 and figure 7: It shows majority of staffs 34(56.6%) were having GNM education, 12(20%) were having B.sc Nursing education, 9(15%) were having Post basic bsc nursing education, and 5(8.3%) were having M.sc Nursing education.

TABLE No. 6 Distribution of subjects according to duration of posted in NICU
N= 60

S.NO	DURATION OF POSTED IN NICU	FREQUENCY (f)	PERCENTAGE (%)
1.	Less than 1year	34	56.6
2.	1-3year	12	20
3.	3-5year	5	8.3
4.	More than 5year	9	15
	Total	60	100

Fig no 8 Stacked column diagram showing percentage distribution of sample according to duration of posted in NICU.
Table 6 and figure 8: It shows majority of staffs 34(56.6%) were doing duty less than 1year, 12(20%) were doing duty in NICU for 1-3years, 9(15%) were doing duty for more than 5year in NICU, and 5(8.3%) were doing duty for 3-5year in NICU.

TABLE No. 7 Distribution of subjects according to have you done ET tube suctioning
N= 60

S.NO	HAVE YOU DONE ET TUBE SUCTIONING	FREQUENCY (f)	PERCENTAGE (%)
1.	Yes	41	68.3
2.	No	19	31.6
	Total	60	100

Fig no 9 Stacked column diagram showing percentage distribution of sample according to have you done ET tube suctioning

Table 7 and figure 9: It shows majority of subjects 41(68.3%) was done ET tube suctioning, and 19(31.6%) was not done ET tube suctioning.

TABLE No. 8 Distribution of subjects according to previous knowledge
N=60

S.NO.	PREVIOUS KNOWLEDGE	FREQUENCY (f)	PERCENTAGE (%)
1.	Yes	21	35
2.	No	39	65
	TOTAL	60	100

Fig 10,Clustered column diagram showing percentage distribution of sample according to previous knowledge .
Table 8 and figure 10: It shows majority of subjects 39(65%) are not having previous knowledge, where as 21(35%) are having previous knowledge

Over all analysis of pretest and posttest knowledge score of NICU staff nurse regarding ET tube suctioning
N=60

S.NO	CATEGORY	PRE-TEST					POST-TEST				
		(f)	(%)	Mean	Mean score %	SD	(f)	(%)	Mean	Mean score %	SD
1.	Poor (0-10)	6	10	8.5	14.1	0.9	0	0	0	0	0
2.	Average (11-20)	11	18.3	17.3	28.8	3.5	0	0	0	0	0
3.	Good (21-30)	43	71.7	16.1	26.8	6.6	60	100	24.7	41.4	2.1
	TOTAL	**60**	**100**	**13.9**	**23.3**	**3.6**	**60**	**100**	**24.7**	**41.4**	**2.1**

Fig no 12: Multiple bar diagram showing percentage distribution of overall analysis of pre test and post test knowledge score of NICU staff nurse by using frequency and percentage (%).

Table no: 10 fig 12, shows pre test and post test knowledge score of NICU staff nurse regarding ET tube suctioning. In pre-test, 6(10%) are had poor knowledge score, 11(18.3%) are had average knowledge score, 43(71.7%) are had good knowledge score.

In pre test poor knowledge score mean is 8.5, mean score percentage is 14.1%, SD(0.9), in average knowledge score mean is 17.3, mean score percentage is 28.8, SD(3.5), in good knowledge score mean is 16.1, mean score percentage is 26.8, SD(6.6).

Whereas in post test 60(100%) nursing staffs are having good knowledge score

In post test good knowledge score mean is 24.7, mean score percentage is 41.4%, SD(2.1).

Table no.11 shows the comparison of overall pretest and posttest of knowledge score.

The findings related to knowledge score of NICU staff nurse regarding ET tube suctioning. The posttest knowledge mean score (2.8), SD (2.0) is higher than the pretest knowledge mean score is (3.5), SD(0.7) and t value = 7.5 obtained, which is highly significant at P=0.05 so the null hypothesis (H0) is rejected and alternative hypothesis (H1) is accepted.

Chi square analysis to find out the association between pre-test knowledge score with their selected socio-demographic variables

N= 60

S. NO	Sample characteristics		Pre test level						N	Chi square	Df	Table value	Inferences
			Good		Average		Poor						
			f	%	f	%	f	%					
1.	Age in years	19-22	1	1.6	12	20	5	8.3	18	3.35	4	9.49	Non significant P>0.005
		23-25	2	3.3	16	26.6	4	6.6	22				
		Above 25	3	5	15	25	2	3.3	20				
2	Type of family	Nuclear	4	6.6	25	41.6	9	15	38	2.14	2	5.39	Non Significant P>0.005
		Joint	2	3.3	18	30	2	3.3	22				
3	Gender	Female	4	6.6	28	46.6	8	13.3	40	1.36	2	5.39	Non significant P>0.005
		Male	2	3.3	15	25	3	5	20				
4	Religion	Hindu	2	3.3	9	15	1	1.6	12	7.27	6	12.5	Non significant P>0.005
		Muslim	2	3.3	6	10	1	1.6	9				
		Christian	1	1.6	25	41.6	8	13.3	34				
		Others	1	1.6	3	5	1	1.6	5				
Educational qualification	GNM		1	1.6	25	41.6	8	13.3	34	7.28	6	12.5	Non Significant P>0.005
	BSC		2	3.3	9	15	1	1.6	12				
	MSC		1	1.6	3	5	1	1.6	5				
	PBBS		2	3.3	6	10	1	1.6	9				
Duration of work	Less than 1year		1	1.6	25	41.6	8	13.3	34	7.2	6	12.5	Non Significant P>0.005
	1-3year		2	3.3	9	15	1	1.6	12				
	3-5years		1	1.6	3	5	1	1.6	5				
	More than 5year		2	3.3	6	10	1	1.6	9				
Have you done ET tube suctioning	Yes		5	8.3	28	46.6	8	13.3	41	23.7	6	12.5	Significant P<0.005
	No		1	1.6	15	25	3	5	19				
Previous knowledge	Yes		1	1.6	18	30	2	3.3	21	3.14	2	5.39	non Significant P>0.005
	No		5	8.3	25	41.6	9	15	39				
Source of information	Journals		3	14.2	3	14.2	3	14.2	9	2.45	4	9.49	Non Significant P>0.005
	Staff nurse		3	14.2	2	9.5	2	9.5	7				
	Mass		3	14.2	1	4.7	1	4.7	5				

Table 12- It shows the association between pre test level of knowledge of NICU staff nurse with their socio demographic characteristics such as age, type of family, gender, religion, educational qualification, duration of work, have you done ET tube suctioning, previous knowledge, source of information
The calculated value of chi square for **have you done ET tube suctioning (23.7)were significant** were as age (3.35), type of family (2.14), gender (1.36), religion (7.27), educational qualification (7.78), previous knowledge (3.14). and source of information (2.45) were not significant.
Hence it is concluded that have you done ET tube suctioning were associated with pre test level of knowledge were as age, type of family, gender, religion, educational qualification, duration of work, previous knowledge and source of information were not associated with pre test level of knowledge.

SUMMARY-
This main study presentation deals with the statement of problem, the objectives under the study, hypothesis, data analysis and interpretation. The main study was conducted in 60 samples.

DISCUSSION
In this section the investigator interpretively discusses the result of the study. In the discussion researchers ties together all the loose end of the study. The result and discussion of the study are the researcher's opportunity to examine the logic of the theoretical frame work, the methods and the analysis of data.

PROBLEM STATEMENT
"A pre-experimental study to evaluate theeffectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurse at selected hospitals of Gwalior (MP.).
The findings of the study were discussed under four sections stated below:

- **Section I**:-Distribution of subjects according to demographic variables using frequency and percentage.
- **Section-II**:- Overall analysis of knowledge scores between pre test and post test by mean, mean score percentage and SD.
- **Section IV**: Analysis of the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurse by using "t" test
- **Section V**: - Chi-square analysis to find out association between pre testknowledge scores with their selected socio-demographic variables.

SECTION – I
Findings related to socio demographic variables:
Table 1 and figure 3,It shows that majority of nurses 22 (36.6%) belonged to age group 23-25 years of age, 18(30%) were belongs to age group 19-22years of age, 20(33.3%) were belongs to above 25 years of age.
Table 2 and figure 4: It shows majority of subjects 38(63.4%) were belongs to nuclear family, and 22(36.6%) minimum were belongs to joint family.
Table 3 and figure 5: It shows that majority of staff nurses 34(56.6%) were Christian, 12(20%) were Hindu 9(15%) were Muslim and 5(8.34%) were others.
Table 4 and figure 6: It shows majority of staff nurse 40(66.6%) were female, and 20(33.4%) minimum were male.
Table 5 and figure 7: It shows majority of staffs 34(56.6%) were having GNM education, 12(20%) were having B.sc Nursing education, 9(15%) were having Post basic bsc nursing education, and 5(8.3%) were having M.sc Nursing education.
Table 6 and figure 8: It shows majority of staffs 34(56.6%) were doing duty less than 1year, 12(20%) were doing duty in NICU for 1-3years, 9(15%) were doing duty for more than 5year in NICU, and 5(8.3%) were doing duty for 3-5year in NICU.
Table 7 and figure 9: It shows majority of subjects 41(68.3%) was done ET tube suctioning, and 19(31.6%) was not done ET tube suctioning.
Table 8 and figure 10: It shows majority of subjects 39(65%) are not having previous knowledge, where as 21(35%) are having previous knowledge
Table 9 and figure 11: It shows majority of subjects 9(42.8%) were exposed from journals, 7(33.3%) were exposed from staff nurse, and 5(23.8%) were exposed from mass media.

SECTION – II
OVERALL ANALYSIS OF KNOWLEDGE SCORE REGARDING ET TUBE SUCTIONING AMONG NICU STAFF NURSE
Table no: 10 fig 12, shows pre test and post test knowledge score of NICU staff nurse regarding ET tube suctioning. In pre-test, 6(10%) are had poor knowledge score, 11(18.3%) are had average knowledge score, 43(71.7%) are had good knowledge score.
In pre test poor knowledge score mean is 8.5, mean score percentage is 14.1%, SD(0.9), in average knowledge score mean is 17.3, mean score percentage is 28.8, SD(3.5), in good knowledge score mean is 16.1, mean score percentage is 26.8, SD(6.6).
Whereas in post test 60(100%) nursing staffs are having good knowledge score
In post test good knowledge score mean is 24.7, mean score percentage is 41.4%, SD(2.1).

SECTION – III
Comparison of pretest and posttest knowledge score
Table no.11 shows the comparison of overall pretest and posttest of knowledge score.
The findings related to knowledge score of NICU staff nurse regarding ET tube suctioning. The posttest knowledge mean score (2.8), SD (2.0) is higher than the pretest knowledge mean score is (3.5), SD(0.7) and t value = 7.5 obtained, which is highly significant at P=0.05 so the null hypothesis (H0) is rejected and alternative hypothesis (H1) is accepted.

SECTION IV
Chi square analysis to find out the association between pre-test knowledge score with their selected socio-demographic variables
Table 12- It shows the association between pre test level of knowledge of NICU staff nurse with their socio demographic characteristics such as age, type of family, gender, religion, educational qualification, duration of work, have you done ET tube suctioning, previous knowledge, source of information
The calculated value of chi square for **have you done ET tube suctioning (23.7)were significant** were as age (3.35), type of family (2.14), gender (1.36), religion (7.27), educational qualification (7.78), previous knowledge (3.14). and source of information (2.45) were not significant.
Hence it is concluded that have you done ET tube suctioning were associated with pre test level of knowledge were as age,

type of family, gender, religion, educational qualification, duration of work, previous knowledge and source of information were not associated with pre test level of knowledge.

SUMMARY

This chapter dealt with analysis, interpretation and discussion of data collected from 60subjects, NICU staff nurses at selected hospitals of Gwalior (MP). Descriptive and inferential statistics were adopted for the analysis and interpretation of the data. Pie diagram, bar diagram, pyramidal diagram were used to clarify the table content.

SUMMARY

The present study was an attempt to assess the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses at selected hospitals of Gwalior (MP).

The research design performed in this study is pre-experimental one group pre-test and post-test research design.

Non-probability purposive sampling technique was used to select the samples of 60 NICU staff nurses.

Pre-experimental one group pre-test and post-test design was adopted and an evaluative approach was used for the present study with the following objectives.

Objectives of the study

4. To assess the pre test and post test knowledge regarding ET tube suctioning among NICU staff nurses.
5. To assess the effectiveness of structured teaching programme on knowledge regarding ET tube suctioning among NICU staff nurses
6. To find out the association between pre test knowledge on ET tube suctioning among NICU staff nurses. with their selected demographic variables.

PURPOSE OF THE STUDY

The main purpose of the study is to provide knowledge about ET tube suctioning among NICU staff nurses in terms of knowledge

INDEPENDENT VARIABLES

In the present study administration of structured teaching programme on ET tube suctioning regarding NICU staff nurses were independent variables

DEPENDENT VARIABLES

In the present study the assessment of knowledge of NICU staff nurses through knowledge questionnaire were dependent variables.

A pre-experimental one group pre-test and post-test research design was considered appropriate for the present study to assess the knowledge of NICU staff nurses related to ET tube suctioning.

The conceptual framework of the study is based on modified general system model given by Ludwig Von Bertalanffy. It provides guidance for development and evaluation of structured teaching programme and Von Bertalanffy says about human system, subsystem, input, throughput and output in terms of feedback.

A review of related research and non research literature helped the investigator to develop the content of structured teaching programme.

Research approach for the study was pre-experimental one group pre-test and post-test design was used. The tool developed and used for data collection were self structured knowledge questionnaire.

The self structured knowledge questionnaire comprised of two sections.

1. SECTION-AThis section consists questions which deals with the socio-demographic data.
2. SECTION-BIt deals with knowledge relevant questions regarding ET tube suctioning and it contains 30 questions.

All questions were multiple choice question type and having only one correct answer. One mark for each correct answer.

The analysis of data was organized and presented under the following headings

MAJOR FINDINGS

Findings related to socio demographic variables:

Table 1 and figure 3,It shows that majority of nurses 22 (36.6%) belonged to age group 23-25 years of age, 18(30%) were belongs to age group 19-22years of age, 20(33.3%) were belongs to above 25 years of age.

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SECTION – II

OVERALL ANALYSIS OF KNOWLEDGE SCORE REGARDING ET TUBE SUCTIONING AMONG NICU STAFF NURSE

Table no: 10 fig 12, shows pre test and post test knowledge score of NICU staff nurse regarding ET tube suctioning. In pre-test, 6(10%) are had poor knowledge score, 11(18.3%) are had average knowledge score, 43(71.7%) are had good knowledge score.

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SECTION – III

Comparison of pretest and posttest knowledge score

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