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A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Chorionic Villus Sampling Purpose, Procedure And Risks Among Student Nurses Studying In A Selected Nursing College At Bangalore.

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ABSTRACT: Chorionic villus sampling (CVS) is a form of prenatal diagnosis to determine chromosomal or genetic disorders in the fetus. It entails sampling of the chorionic villus and testing it for chromosomal abnormalities, usually with FISH or PCR. **METHOD:** Non probability convenience sampling technique was used for the study. Structured knowledge questionnaire was used to collect the data from the samples. **DATA ANALYSIS:** The obtained data was analyzed by descriptive and inferential statistics analyzed by descriptive and inferential statistics and interpreted in terms of objectives and hypothesis of the study. The level of significance was set as P≤0.0001 level. **RESULTS:** The results of this study showed that, in pretest majority of student nurses 97.67% had inadequate knowledge, 3.33% have moderate knowledge and no one has adequate knowledge x whereas in posttest after imparting structured teaching programme majority 97.67% had adequate and 3.33% had moderate knowledge and none had inadequate knowledge regarding chorionic villus sampling purpose, procedure and risk among student nurses. So, it is proved that the STP was effective in improving knowledge of student nurses regarding chorionic villus sampling purpose, procedure and risk. The chi-square value of the pretest level of knowledge of student nurses with their selected socio demographic variables was significant at P≤ 0.05 level.

Index Terms: Assess, Effectiveness, Knowledge, Student Nurses, Structured Teaching Programme, Chorionic Villus Sampling, Purpose, Procedure, Risks, Socio-demographic Variables.

I.INTRODUCTION:

Health is an important aspect for the survival of human, whereas a woman's health has certain abilities that a man's does not. The uniqueness which differentiate women with men include menarche, pregnancy, menopause etc. Thus, the health status of women directly reflects the health status of the nation.

Prenatal screening are a set of procedures that are performed during pregnancy on expectant mothers to determine whether a baby is likely to have specific birth defects. Most of these tests are noninvasive. Chorionic Villus Sampling is a first choice among the invasive procedures for identifying chromosomal abnormalities and other inherited disorders. It can help in identifying chromosomal problems such as Down syndrome or other genetic diseases such as cystic fibrosis, Tay-Sachs disease, and Sickle cell anemia.

CVS is considered to be 98-99% accurate in the diagnosis of chromosomal defects. This procedure also identifies the sex of the fetus, so it can identify disorders that are linked to one sex Major benefits of CVS is it can be done early in pregnancy i.e. 10 -13 weeks and results are usually obtained within 7 days.

According to American College of Obstetrics and Gynecology the indications of CVS is when there is an increased risk for a genetic disorder in the baby which include elderly primigravida women i.e. age > 35 or older, Couples with the previous history of birth defect child or a family history of certain birth defects, Couples with a parent known to carry of a chromosomal abnormality or genetic disease, Pregnant women with other abnormal genetic test results.

LIST OF ABREVIATION USED

Abbreviation	Expansion
STP	Structured Teaching Programme
ROL	Review of Literature
NABH	National Accreditation Board of Hospitals and Healthcare Providers
ICN	International Counsel of Nursing
STD	Sexually Transmitted Disease
MRI	Magnetic Resonance Imaging
IUGR	Intrauterine Growth Restriction
SD	Standard Deviation

II.POPULATION & SAMPLE

The target population of the study is nursing students

The accessible population in this study was 4th year BSc nursing students at selected nursing college Bengaluru.

SAMPLE: Nursing students who are studying in 4th year BSc Nursing at selected nursing college Bengaluru.

SAMPLE SIZE: The sample of this study comprised of 60 nursing students from Indian Academy college of Nursing Bangalore.

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III.THEORITICAL FRAMEWORK

A conceptual framework is a group of concepts and a set of proportions that spell out the relationship between them. A concept is a term or label used to describe a phenomenon or a group of phenomena. A conceptual frame work is a theoretical approach to the study problems that are scientifically based and emphasis the selection arrangement and classification of its concepts.

The conceptual frame work is a general amalgam of all the related concepts in the present situation. The conceptual framework of the present study is based on general systems model of theory approach with input, throughput, output and feedback which was first introduced by Ludwig Von Bertalanffy. This study is done particularly to prepare a structured teaching programme, pre-test and post-test to evaluate its effectiveness of STP on chorionic villus sampling purpose, procedure and risk among staff nurses in terms of knowledge gain.

According to systems theory, a system is a group of elements that interacts with one another in order to achieve the goal. The component interacts within a boundary and filters the type and rate of exchange with

the environment. All living systems are open, in that, there is a continual exchange of matter, energy and information.

Each system may be viewed as having one (or) more supra systems and subsystems. In open system, there are varying degree of interaction with the environment from which the system receives input and gives back output in the form of matter, energy and information.

In this study, student nurses are considered as open system. All systems must receive varying type and amount of information from the environment.

Input – In this study input includes assessment of pre-test knowledge level of student nurses regarding purpose, procedure and risk of chorionic villus sampling by using structured knowledge questionnaire and implementation of STP.

Throughput – It is the action needed to accomplish the desired task. In this study, the following process is adopted. The student nurses understand the STP given and interpret.

Output – After processing, the system returns output to the environment in an altered state, affecting the environment. In this study, the "output'' refers to the knowledge level of student nurses regarding purpose, procedure and risks of chorionic villus sampling after distribution of STP which will be assessed by a post-test.

Evaluation

Evaluation is the information about some aspects of data or energy processing that can be used, to evaluate and monitor the system and guide it to more effective performance. In the present study, the evaluation measures the success or failure of the output. This is accomplished by meaningful outcome criteria established to measure the level of knowledge acquired by the student nurses regarding purpose, procedure and risks of chorionic villus sampling.

Feedback

The system continuously monitors itself and the environment for information to guide its operation. This feedback information of environmental responses to the system output is utilized by the individual in adjustments, correction and accommodation to the interaction with the environment- "Feedback" may be positive, negative or neutral.

IV. RESEARCH METHODOLOGY

Methodology of research organizes all the component of the study is a way that is most likely to lead to valid answer to the sub-problems that have been posed.

This chapter deals with the methodology adopted for the study. It includes research design, research approach, study setting and sampling technique, sampling criteria, content validity, and development of tool, pilot study, reliability, data collection procedure and plan for data analysis.

RESEARCH APPROACH

Research approach is the basic procedure for the research of enquiry. The research approach helps the researcher to determine what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data. In view of the nature of problem selected for the present study to assess the difference in knowledge regarding purpose, procedure and risks of chorionic villus sampling. In this study research approach was one group pre-test and post-test approach.

RESEARCH DESIGN

Research design is an investigator's overall plan for obtaining answers to the research question or for testing hypothesis. Research design helps the researcher in selection of subjects, identification of variables, their manipulation and control.

The selection of design depends upon the purpose of the study, the research approach and variables to be studies. Pre-experimental research design was chosen for the study.

GROUP	PRE-TEST	INTERVENTION	POST-TEST
Student nurses working in a selected hospital at Bangalore	O1	X	O2

O1 = assessing the existing level of knowledge on purpose, procedure and risks of chorionic villus sampling through structured questionnaire.

X = intervention (structured teaching programme) on purpose, procedure and risks of chorionic villus sampling will be given to the student nurses studying in a selected nursing college at Bangalore.

O2 = assessing the post-test level of knowledge regarding purpose, procedure and risks of chorionic villus sampling will be given to the same subject with the help of same questionnaire.

VARIABLES

Variables are qualities, properties or characteristics of the person, things or situation that change or vary. The variables mainly included in this study are socio demographic variables and dependent variable.

DEMOGRAPHIC VARIABLES

In this study the demographic variables includes the characteristics of student nurses working in a selected nursing college at Bangalore such as age, gender, religion, educational level, practical knowledge on CVS, any training on purpose, procedure and risks of CVS and source of information about purpose, procedure and risk of CVS.

DEPENDENT VARIABLE

In this study the dependent variable is the knowledge of student nurses studying in a selected nursing college at Bangalore.

INDEPENDENT VARIABLE

In this study the independent variable is structured teaching programme on knowledge regarding purpose, procedure and risks of chorionic villus sampling.

SAMPLING TECHNIQUE

Non-probability purposive sampling technique was used to select the samples for the study

Inclusion criteria

Inclusion criteria includes student nurses those who are:

- Student nurses studying in a selected nursing college at Bangalore
- Student nurses who were willing to participate in the study
- Student nurses who are available during the study.

Exclusive criteria

Exclusive criteria includes student nurses those who are:

- Student nurses participate in pilot study
- Student nurses who had undergone training on CVS
- Student nurses who are on the leave.

V.RESULT & DISCUSSION

SELECTION AND DEVELOPMENT OF RESEARCH TOOL

Tools were prepared on the basis of objective of the study.

A structure knowledge questionnaire was developed on the basis of the objectives of the study, as it was considered to be the most appropriate instrument to elicit responses from student nurses. Since the objectives of the study was to assess the knowledge of student nurses regarding purpose, procedure and risk of chorionic villus sampling. It was decided that the questionnaire would have two sections of the following aspects:

The data organized and presented in four section

Section I:

Description of selected socio demographic variables of student nurses in selected nursing

college at Bangalore.

Section II:

Assessment of pre-test and post-test knowledge scores of student nurses regarding chorionic villus sampling.

Section III:

Assessment of effectiveness of structured teaching programme on knowledge of student nurses

regarding chorionic villus sampling.

Section IV:

Association between pre-test knowledge scores of student nurses with their socio demographic

variable

SECTION A: SOCIO-DEMOGRAPHIC DATA

It consist of characteristics of student nurses studying in nursing college such as age,

gender, religion, education level, practical knowledge on CVS, any training on purpose, procedure and risk of CVS and source of information about purpose, procedure and risk of CVS.

SECTION B: STRUCTURED KNOWLEDGE QUESTIONNAIRE

The knowledge questionnaire was prepared after going through an intensive review of

literature including research articles and personnel discussion with the experts.

It includes 38 questions related to chorionic villus sampling purpose, procedure and risk,

the items were multiple choice questions in nature. The student nurses were expected to choose

the correct responses. All the questions had only one correct answer. The tools was in English.

A blue print was made to prepare the test items of the tools. Items related to cognitive

domain only were selected. Content was classified under different aspects such as

- Knowledge on general information on chorionic villus sampling
- Knowledge on advantage and purpose of chorionic villus sampling
- Knowledge on technique and procedure of chorionic villus sampling
- Knowledge on pregnancy outcomes and risk of chorionic villus sampling.

TABLE – 1 FREQUENCY AND PERCENTAGE DISTRIBUTION ON SELECTED DEMOGRAPHIC VARIABLE OF STUDENT NURSES.

Sl. No.	Demographic Variables	No	%
1.	**Age in years**		
	a) 18 – 20 years	12	20%
	b) 21 – 23 years	46	76.67%
	c) 24 – 26 years	2	3.33%
	d) 27 and above	0	0%
2.	**Gender**		
	a) Male	13	21.67%
	b) Female	47	78.33%
3.	**Religion**		
	a) Hindu	30	50%
	b) Muslim	15	25%
	c) Christian	15	25%
	d) Others	0	0%
4.	**Educational level**		
	a) 1st year B.Sc. Nursing	0	0%
	b) 2nd year B.Sc. Nursing	0%	0%
	c) 3rd year B.Sc. Nursing	17	28.33%
	d) 4th year B.Sc. Nursing	43	71.67%
5.	**Do you have any practical knowledge on CVS**		
	a) Yes	7	11.67%
	b) No	53	83.33%
6.	**Undergone any training on purpose, procedure and risk of CVS**		

	a) Yes	6	10%
	b) No	54	50%
7.	**Source of information about purpose, procedure and risk of CVS**		
	a) Mass media	13	21.67%
	b) Friends & relatives	0	0%
	c) Health personals	15	25%
	d) Nil	32	53.33%

TABLE – 2 PRE – TEST KNOWLEDGE OF STUDENT NURSES REGARDING CHORIONIC VILLUS SAMPLING, PURPOSE, PROCEDURE AND RISK.

Level of Knowledge	**Scores**	**No. of Respondents (%)**	
		No	**%**
Inadequate	<50%	58	96.67%
Moderate	50-75%	2	3.33%
Adequate	>75	0	0
Total		60	100%

TABLE – 3 POST – TEST KNOWLEDGE SCORES OF STUDENT NURSES REGARDING CHORIONIC VILLUS SAMPLILNG, PURPOSES, PROCEDURE AND RISK.

Level of Knowledge	**Scores**	**No. of Respondents (%)**	
		No	**%**
Inadequate	<50%	0	0
Moderate	50-75%	2	3.33%
Adequate	>75	58	96.67%
Total		60	100%

TABLE – 4 EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING CHRIONIC VILLUS SAMPLING, PURPOSES, PROCEDURE AND RISK.

Aspects wise knowledge	Pre-test		Post-test		Paired 't' Test
	Mean	SD	Mean	SD	
General aspects of chorionic villus sampling.	2.3	0.65	7.6	0.55	4.47**
Purposes of chorionic villus Sampling	1.9	0.64	8.67	0.63	5.14**
Procedures of chorionic villus Sampling	2.47	0.68	9.48	0.93	7.56**
Risk of chorionic villus Sampling	2.12	0.8	37.96	0.80	6.47**
Overall	8.79	2.77	63.71	2.91	23.64**

significant at P<0.05 level, df 40, table value1. 68

TABLE -5 AREA WISE MEAN PRE-TEST KNOWLEDGE SCORES OF STUDENT NURSES REGARDING CHORIONIC VILLUS SAMPLING PURPOSE, PROCEDURE AND RISK.

Aspects wise knowledge	Maximum statement	Minimum statement	Range	Mean	Standard deviation
General aspects of chorionic villus Sampling	9	0	0 - 9	2.3	0.65
Purposes of chorionic villus sampling	10	0	0 - 10	1.9	0.64
Procedure of chorionic villus sampling	11	0	0 - 11	2.47	0.47
Risk of chorionic villus sampling	8	0	0 - 8	2.12	0.34
Overall	38	0	0 - 38	8.79	2.1

TABLE – 6 AREA WISE MEAN POST-TEST KNOWLEDGE SCORES OF STUDENT NURSES REGARDING CHORIONIC VILLUS SAMPLING PURPOSE, PROCEDURE AND RISK.

Aspects wise knowledge	**Maximum statement**	**Minimum statement**	**Range**	**Mean**	**Standard deviation**
General aspects of chorionic villus Sampling	9	0	0 - 9	7.6	0.55
Purposes of chorionic villus sampling	10	0	0 - 10	8.67	0.63
Procedure of chorionic villus sampling	11	0	0 - 11	9.48	0.93
Risk of chorionic villus sampling	8	0	0 - 8	6.72	0.80
Overall	38	0	0 - 38	32.47	2.91

TABLE – 7 ASSOCIATION BETWEEN PRE-TEST SCORE OF THE STUDENT NURSES WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

Sl. No.	**Demographic Variables**	**No**	**Level of knowledge**		**Chi Square**
			< Median	**≥ Median**	
1.	**Age in years**				
	e) 18 – 20 years	12	12	0	$\chi^2 = 0.15$ df = 1 NS
	f) 21 – 23 years	46	44	2	
	g) 24 – 26 years	2	2	0	
	h) 27 and above	0	0	0	
2.	**Gender**				$\chi^2 = 0.21$ df = 1 NS
	c) Male	13	13	0	
	d) Female	47	45	2	
3.	**Religion**				$\chi^2 = 1.05$ df = 1 NS
	e) Hindu	30	28	2	
	f) Muslim	15	15	0	
	g) Christian	15	15	0	

	h) Others	0	0	0	
4.	**Educational level**				$\chi^2 = 0.23$
	e) 1st year B.Sc. Nursing	0	0	0	df = 1 NS
	f) 2nd year B.Sc. Nursing	0%	0	0	
	g) 3rd year B.Sc. Nursing	17	17	0	
	h) 4th year B.Sc. Nursing	43	41	2	
5.	**Do you have any practical knowledge on CVS**				χ^2= 3.59 df = 1 NS
	c) Yes	17	17	2	
	d) No	43	41	0	
6.	**Undergone any training on purpose, procedure and risk of CVS**				χ^2= 16.82 df = 1 S**
	c) Yes	6	4	2	
	d) No	54	54	0	
7.	**Source of information about purpose, procedure and risk of CVS**				χ^2= 5.95 df = 1 NS
	e) Mass media	13	11	2	
	f) Friends & relatives	0	0	0	
	g) Health personals	15	15	0	
	h) Nil	32	32	0	

DATA ANALYSIS: The obtained data was analyzed by descriptive and inferential statistics analyzed by descriptive and inferential statistics and interpreted in terms of objectives and hypothesis of the study. The level of significance was set as P≤0.0001 level.

RECOMMENDATION:

The similar study can be conducted in larger samples.

A similar study can be undertaken by utilizing other domains like experimental and comparative study.
A similar study can be conducted by using different teaching methods.

Similar study can be conducted in different settings to find out the significant difference.

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