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A STUDY TO ASSESS EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM REGARDING ELECTROCARDIOGRAM AMONG INTERNSHIP STUDENTS OF SELECTED NURSING COLLEGE, IN VADODARA

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ABSTRACT

Background: It is very crucial for Nurse working in Hospital environment to acquire the knowledge of Electrocardiogram for the prompt action during the changes of rhythm or heart arrest and save more lives and reduce the global burden of cardiovascular disease.

Objectives:- The study was Aimed to **find** knowledge regarding Electrocardiogram among internship students. Find out effectiveness of structured teaching program on level of knowledge regarding Electrocardiogram among internship students. To determine association between pre-test knowledge score regarding Electrocardiogram with demographic variables.

Material and Method: The selection of design depends upon the purpose of the study, research approach and variable to be studied. One group pre-test, post-test research design, which belongs to pre-experimental design, was selected to assess effectiveness of structured teaching program regarding ECG among internship nursing students. The evaluation of structured teaching program was done through post-test on the 8th day of implementation of structured teaching program.

Results: The results shows that obtained chi square value in the variables such as, year of study (X^2=6.8182), age (X^2=11.0155) The obtained value is greater than the table value at 0.05 level of significance thus it is considered as significant. Education of parents (X^2=1.7), occupation of parents(X^2=0.399) and gender(X^2=1.7816). The obtained value is lesser than the table value at 0.05 level of significance thus it is considered as non- significant.

Conclusion: The study was undertaken to assess the effectiveness of structured teaching regarding Electrocardiogram in order to improve knowledge among internship students of selected Nursing College followed by implementation of structured teaching program. Post-test was conducted 8th day after implementation of structured teaching program using the self-structured knowledge questionnaires questionnaire to find out the effectiveness of structured teaching program. A paired 't' test was computed between pre-test and post-test score indicate that there was improvement in level of knowledge scores among internship students. Hence it indicates that structured teaching program was effective.

Keywords: Assess, Effectiveness, Structured teaching program, Internship students, Knowledge, Electrocardiogram

INTRODUCTION

Nearly one third of all deaths globally are caused by cardiovascular disease (CVD) It was founded in 2000 and informed to people around the globe that cardiovascular disease (CVD) is the world's leading cause of death. WHO is committed to reducing global mortality from non-communicable diseases (NCDs) by 25% by 2025, and CVD is accountable for nearly half of all NCD deaths, making it the world's number one killer.to reduce the risk of cardiovascular disease **[1]**.

Today's Professional nurses are no longer limited to the Professional nursing is no longer limited to one position of following a doctor's instructions. Today's nurses are anticipated to earn independent judgment in daily health care decisions. This capacity for making decisions is a result of having the right information, the right attitude, and the right expertise in terms of health care interventions. Additionally, accuracy in decision-making on a health-related activity depends on health assessments, analyses of the health metrics, and the identification of particular health issues and ECG monitoring and interpretation effectiveness of educational intervention among needs. ECG is one of these crucial health indicators. To make autonomous healthcare decisions and support therapeutic interventions, nurses must be able to accurately analyses ECG readings **[2]**.

A recent report in 2010 shows that 60% of the world's heart patients are in India. Approximately 60% of all cardiac deaths occur due to arrhythmias leading to Sudden Cardiac Arrest (SCA) in India.[7]Abnormalities of cardiac rhythm are prevalent in community-dwelling adults, affecting >2% of individuals. Incident cardiac rhythm abnormalities occur at a rate of 0.5% per year, similar to rates of stroke, myocardial infarction, and heart failure. Risk of incident rhythm abnormalities is increased in the setting of older age, male

sex, traditional cardiac risk factors and heart failure **[3]**.

May honey ohn, urban D'souza, khin maung ohn (2020) had conducted a qualitative study on negative attitude towards ECG learning among UG medical students. The purpose of this study was to assess UG students difficulty in ECG learning and help educators to design appropriate ECG learning curriculum to improve competent skills in ECG interpretation. Negative attitude towards ECG can become a threat to gain competency in interpretation of skills regarding ECG. lack of knowledge in ECG learning with taxonomy of cognitive domains and enables the medical teacher to come up with innovative and effective strategies for improving ECG learning skills in UG medical curriculum **[4]**.

C.J Breen, Greg Kelly, Wgeorge Kernohan (2019) had conducted a review of learning, teaching and assessment on ECG interpretation skill acquisition. The correct interpretation of ECG recordings is complex and clinically challenging with misinterpretation having the potential to result in poor outcomes or even patient fatality. A lack of established ECG reporting methods may contribute to the variation in reported ECG interpretation competence across many healthcare professionals **[5]**.

Aino Maija Still (2017) had conducted a study on prevalence and characteristics of inappropriate sinus tachycardia. The prevalence of sinus tachycardia is higher among middle-aged population. For diagnosis of sinus tachycardia the students should develop skills in order to reduce the death of patient due to cardiac disorders **[6]**.

Juby Kuriakose *et al* (2022) conducted a pre experimental one group pre-test & post-test study to assess effectiveness of structured teaching program on knowledge regarding ECG interpretation among 2nd year B.Sc. Nursing students. Total 60 samples were selected from 2nd year B.Sc. nursing class for the study. The results showed that in pre-test none of the sample had adequate knowledge regarding ECG interpretation however after provision of structured teaching program on how to adequately read the electrocardiogram graph there was improvement in the knowledge of students in the post-test. It was concluded that structured teaching program was effective in improving the knowledge of 2nd year B.Sc nursing students. Through provision of repeated classes and demonstrations can help in improving or updating knowledge and skills regarding ECG interpretation **[7]**.

Radha Kuttan, Prabha Agnibhoj, Mini Alex, Anurag Bhai Patidar (2021) conducted a study to assess effectiveness of

virtual teaching regarding interpretation of ECG using a sample of 100 student nurses. In this study the knowledge was guided with the help of virtual training through Zoom online platform. The results of the study showed that in the pre-test 50% of student had average knowledge and 50% of student had good knowledge regarding interpretation of ECG, however after provision of teaching program the post test results revealed good performance of the students. It concluded that the virtual teaching program was effective in improving knowledge of student nurses. Learning regarding ECG interpretation helps to improve the quality of health care delivery to the cardiac patients and also critically ill patient as these will help the students to make up the future nursing workforce skillful and intelligent **[8]**.

Mona Nadr Ebraheim Ahmed (2022) conducted a study on nurse's performance regarding electrocardiography application and it's interpretation. The nurse's working in coronary care unit of both the gender participated in the study. Hence it was concluded that few of the nurses had got unsatisfactory level of knowledge regarding ECG application and it's interpretation and few of the nurse's had got unsatisfactory level of practice regarding ECG application and it's interpretation. Training programs should be included in order to level up the skill and knowledge of nurse's regarding ECG application and it's interpretation **[9]**.

Shatrughan Pareek, Mukesh Singh Bisht (2020) conducted a research on knowledge of student nurse's regarding interpretation of ECG at Miranda College of Nursing, Bangalore. For the study total 60 samples were selected from 3rd and 4th year B. Sc. Nursing students and demographic variables were also included. Most of the respondents were of the age between 19-22 and majority of the respondents were females. Adequate knowledge regarding ECG interpretation might help in early diagnosis of cardiac disease in order to save the life of patient. ECG interpretation knowledge should be pivotal in clinical practice and academic curriculum. The administrators have to emphasize on organizing and implementing different educational modules and activities regarding ECG interpretation **[10]**.

MATERIAL AND METHODS

A pre experimental research was conducted to assess effectiveness of structured teaching program on knowledge regarding Electrocardiogram among internship students of selected nursing colleges of Vadodara. A sample size of 79 samples were selected for this study who fulfil inclusion and exclusion criteria using simple random sampling. The study was conducted at Sumandeep Nursing college, Vadodara. The data collection was done by

using Self-Structured Questioner. The data collected was analysed using descriptive and inferential statistics.

RESULTS

A total sample of 79 internship studentds were included in this study out of which 15(18%) respondents belongs to 3rd year G.N.M ,64 (82%) belongs to 4th year B.sc . 23 (29%) respondents belongs to age of 20 years,24 (30%) belongs to age of 21 years and 32(41%) respondent belongs to age of 22 years. 20 (21%) respondents are male,59 (79%) belongs are female. 28 (35%) respondents parents have not attended and primary education,29(37%) respondents parents were primarily educated, 14 (18%) respondents parents were secondary educated and 8(10%) respondents parents were degree holders **(Table 1)**.

The knowledge score of sample before administration of structured teaching program, according to the pre-test knowledge score (20%) of participants were have inadequate knowledge score (60%) of participants were having moderate level of knowledge and (20%) of participants were having adequate level of knowledge regarding Electrocardiogram **(Table 2)**.

A paired t test was done between mean of pre -test and post -test knowledge scores obtained t value for knowledge is (4.76) is greater than the table value of 1.990 at 0.05 level of significance **(Table 3)**.

The obtained chi square value in the variables such as, year of study (X^2=6.8182), age (X^2=11.0155) The obtained value is greater than the table value at 0.05 level of significance thus it is considered as significant. Education of parents (X^2=1.7), occupation of parents(X^2=0.399) and gender(X^2=1.7816). The obtained value is lesser than the table value at 0.05 level of significance thus it is considered as non-significant **(Table 4)**.

Table 1: Frequency and percentage distribution of socio demographic variables (N=79)

S. No.	VARIABLE	FREQUENCY	PERCENTAGE
1.	Year of study		
	3rd Year GNM	14	18%
	4th Year BSc Nursing	64	82%
2.	Age in Years		
	20	23	29%
	21	24	30%
	22	32	41%
3.	Gender		
	Male	20	21%
	Female	59	79%
4	Education qualification of Mother and Father		
	No primary education	28	35%
	Primary Education	29	37%
	Secondary Education	14	18%
	Degree	8	10%
5	Parent's Occupation		
	Agriculture	23	30%
	Health Profession	16	20%
	Business	31	39%
	Self-Employed	9	11%

Table 2: Overall pre-test knowledge scores of internship students

Category	Pre-test Knowledge levels	
	Frequency	Percentage
Inadequate	17	22%
Moderate	45	56%
Adequate	17	22%
Total	79	100%

Table 3: Comparison of overall pre & post test knowledge scores of internship students

Variables		Mean	Mean difference	Standard deviation	t-value
Knowledge	Pre-test	18.21	5.2	13.29	4.76
	Post-test	23.44			

Table 4: Association between pre-test knowledge and practice scores with selected demographic variables (N=79)

Variables		LEVEL OF KNOWLEDGE SCORE			X^2 Value	df	Inference
		Inadequate	Moderate	Adequate			
Year of study	3rd Year GNM	5	3	7	6.8182	1	Significant
	4th Year BSc Nursing	12	42	10			
Age in Years	20 years	5	8	10	11.0155	4	Significant
	21 years	4	17	3			
	22 years	8	20	4			
Gender	Male	6	10	4	1.7186	1	Not significant
	Female	11	35	13			
Education qualification of Mother and Father.	No primary	6	17	5	3.3386	6	Not significant
	Primary Education	7	18	4			
	Secondary Education	1	8	5			
	Degree	3	2	3			
Parent's Occupation	Agriculture	6	12	5	6.8102	6	Not significant
	Health Profession	1	9	6			
	Business	7	21	3			
	Self-Employed	3	3	3			

The present research tried to assessed the knowledge regarding Electrocardiogram among internship students at selected nursing college of Vadodara. Data was collected by using Self –Structured questioner. There were total 79 samples collected from selected college of nursing. The sampling technique was non simple random sampling technique. Data analysis was done using SPSS software.

CONCLUSION

The study concluded that the structured teaching program was effective in improving their knowledge reading electrocardiogram.

According to pre-test 87% have average knowledge & 13% have good knowledge and 88.33% have average practice and 11.67% have good practice reading ECG. According to post test 96.67% have good knowledge & 3.33% have average knowledge and no one have poor knowledge and 100% have good practice and no one have average and poor practice regarding ECG which was higher

than pre-test knowledge and practice score range.

The mean post-test knowledge score also was higher than mean pre-test score.

There was significant difference in knowledge and practice scores regarding ECG among internship students at Selected Nursing college, Piparia, Vadodara.

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