



A study to assess the level of knowledge regarding cardiovascular assessment among 4th year BSc. in nursing students of Gitam Institute of Nursing using structured teaching program (STP)

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Abstract

Understanding how to properly assess the cardiovascular system and identifying both normal and abnormal assessment findings will allow the nurse to provide quality, safe care to the patient. Cardiovascular assessment increases the chances of patient survival and reduces the chances of risk for potentially life-threatening complications such as cardiopulmonary arrest. Thus, the present study was planned to *assess the level of knowledge regarding Cardiovascular Assessment among 4th Year BSc.in Nursing Students of Gitam Institute of Nursing using the Structured Teaching Program (STP)*. Objectives of this study were; 1. To Assess knowledge level among 4th-year BSc.in Nursing Student before STP(Pretest). 2. To Assess the knowledge of study participants after STP (Post Test). 3.To Compare the Knowledge Regarding CVS assessment before and after STP. 4. To Find the Association Between the Level of Knowledge with their Selected Socio-Demographic Variables. Quasi-Experimental One Group Pre-Test and Post-Test design was used. An Evaluative Approach was adopted to conduct the Study. Eighty (80) 4th Year Student nurses were selected using Non-Probability Convenience Sampling Technique at Gitam Institute of Nursing Visakhapatnam. We Approached the Eligible Student Nurses and those who were willing to participate in the study were required to sign a Consent Form, fill out the Questionnaire and then Return to the Researcher Immediately. Pre- Test was conducted on all eighty (80) participants and after that STP was given to all the study participants, a post-Test was conducted after 7 Days of Teaching the Group. Data were entered in MS-Excel and analyzed in SPSS V25. Descriptive statistics were represented with percentages for qualitative data, Mean with SD or median with IQR for quantitative data. Shapiro wilk test was applied to find normality. The Chi-square test was applied for comparison of proportions. $P < 0.05$ was considered as statistically significant. Pre-Test results found that the Majority 64 (80%) of Respondents had no practice on CVS assessment. It was however found that Pretest knowledge score were poor among the study participants where it was revealed that (55%) had poor knowledge on CVS assessment, (36.3%) had average knowledge and (7.5%) had good knowledge Score. Post-test knowledge Score after structured Teaching program on Cardiovascular assessment denoted increased score with a P-Value < 0.001 in both pre and post History taking and physical examination respectively. The Mean and SD of Pre-Test Score Was 18.85 with SD 5.13 and 24.13 with SD 6.231 for posttest. With the implementation of the Structured Teaching program among the Group, the Knowledge Mean Percentage and SD For Post-Test Was increased Respectively. This shows there was a significant improvement in the Knowledge of 4th Year student Nurses Regarding CVS assessment. Structured Teaching Program was highly effective in improving the Knowledge of Students. There was No Statistically Significant Association found Between the Knowledge Scores of the Respondents and Selected Demographic Variables.

Keywords: cardiovascular system, structured teaching program (STP), knowledge, student nurse

Introduction

The cardiovascular system is the lifeline of the body. Its primary function is to act as a transport system, delivering oxygen by way of the red blood cells and delivering nutrients, metabolites, and hormones to every cell in the body. At the same time, it transports metabolic wastes for detoxification and excretion. The cardiovascular system also contains white blood cells, whose main function is to fight infection.

Because cardiovascular disease is the leading health problem worldwide, accurate assessment of the cardiovascular system is essential to identify and evaluate changes in cardiovascular function and potential risk factors for cardiovascular disease.

Assessment provides the basis of patient care by providing the important information and current patients' needs that requires prompt actions and interventions.

The evaluation of the cardiovascular system includes history taking and a detailed examination of the heart and peripheral vascular system. Student Nurses must incorporate subjective statements and objective findings to elicit clues of potential signs of dysfunction. Symptoms like fatigue, indigestion, Fast heart rate (tachycardia), slow heart rate (bradycardia), leg swelling, etc. may be benign or may indicate something more ominous. As a result, student nurses must be vigilant when collecting comprehensive information to utilize their best clinical judgment when providing care for the patient.

Need for The Study

Cardiovascular diseases (CVDs) have now become the leading cause of mortality in India. A quarter of all mortality is attributable to CVD. Ischemic heart disease and stroke are the predominant causes and are responsible for $>80\%$ of CVD deaths. The Global Burden of Disease study estimate

of age-standardized CVD death rate of 272 per 100 000 population in India is higher than the global average of 235 per 100000 population. Some aspects of the CVD epidemic in India are particular causes of concern, including its accelerated buildup, the early age of disease onset in the population, and the high case fatality rate.

In India, the epidemiological transition from predominantly infectious disease conditions to non-communicable diseases has occurred over a rather brief period of time. Premature mortality in terms of years of life lost because of CVD in India increased by 59%, from 23.2 million (1990) to 37 million (2010). Despite wide heterogeneity in the prevalence of cardiovascular risk factors across different regions, CVD has emerged as the leading cause of death in all parts of India, including poorer states and rural areas.

Strategies for early recognition require active participation of Nurses working with a patient to perform assessment of cardiovascular system to anticipate actual and potential complications which in turn may help to reduce morbidity and mortality and support global action plan of 2025. Nurses as a part and majority healthcare workforce must graduate with knowledge and skills regarding cardiovascular assessment.

Materials and Methods

A single group pretest and post-test (quasi-experimental) design was done for the study. Pretest questionnaire depicted as P1, and then a planned Structured teaching program was given after (7) days of pretest which was depicted as X, a post test was conducted using the same structured questionnaire that was depicted as P2. The design can be represented as:

Table 1

Pretest	Structured-Teaching Program (STP)	Post test
P	X	P2

P1: Pre- test was measured by assessment of knowledge through structured Knowledge questionnaire.

X: Administration of structured teaching program on Cardiovascular Assessment

P2: Post- test was measured by using same knowledge questionnaire

Eighty (80) 4th Year Student nurses were selected using Non-Probability Convenience Sampling Technique at Gitam Institute of Nursing Visakhapatnam. We Approached the Eligible Student Nurses and those who were willing to participate in the study were required to sign a Consent Form, fill out the Questionnaire and then Return to the Researcher Immediately.

Description of Tools

A self-structured knowledge questionnaire was developed on the basis of review of the relevant literature.

PART-A: -Socio-demographic variables: It consisted of 5 items to obtain socio-demographic information such as age, sex, years of experience in particular area, Practice of cardiovascular assessment, and if they have received any structured teaching program on Cardiovascular assessment.

PART-B, C, D, E & F: - The knowledge questionnaire consisted of 40 items in the form of multiple, choice/objective and subjective questions. The respondent has to circle one most appropriate answer and list essential part of either history taking or Physical examination of Cardiovascular system.

Every correct answer one mark was allotted. The copies of this tool were circulated among the experts in the field of nursing experts, physician, and statistician Interpretation of range according to their level of knowledge was done based on the following score after data analysis by statistician

Table 2

Score	Description
0-9	Very poor
10-18	Poor
19-27	Average
28-34	Good
35-40	Very good

Test of validity and reliability

Validity

Validity is the degree to which on instrument measure what it is supposed to measure. (Polit and Beck, 2007) ^[9]

Content validity of the questionnaire and lesson plan was established and sent to experts from various fields such as medical and surgical nursing (n-4), doctorate in medicine (n-1), biostatistician (n-1). Their opinion and suggestions were considered to modify the tools.

Reliability

of the tools was tested by implementing the tool and structured teaching programme on 30 students admitted in other departments Gitam Deemed University. Test-retest method where Karl’s pearsons correlation formula was used to find out the reliability of tool. The r value was r = 0.9.

Ethical Consideration

Prior to the data collection written permission was obtained from the Gitam Ethical committee and Principal Gitam Institute of Nursing Visakhapatnam.

Results

Pre-Test results found that the Majority 64 (80%) of Respondents had no practice on CVS assessment.

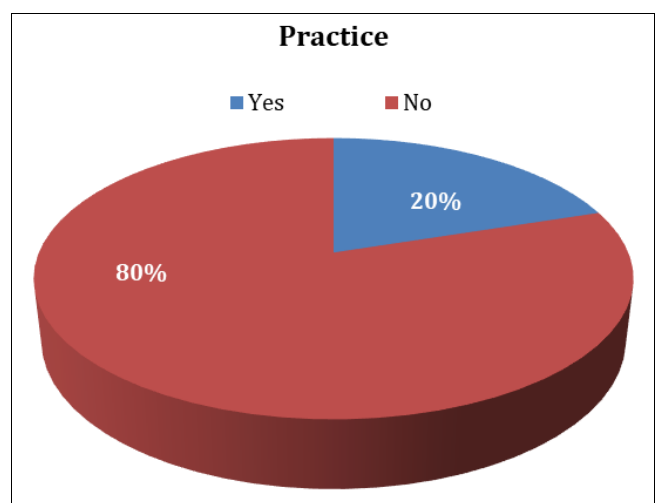


Fig 1

It was however found that Pretest knowledge score were poor among the study participants where it was revealed that (55%) had poor knowledge on CVS assessment, (36.3%) had average knowledge and (7.5%) had good knowledge Score.

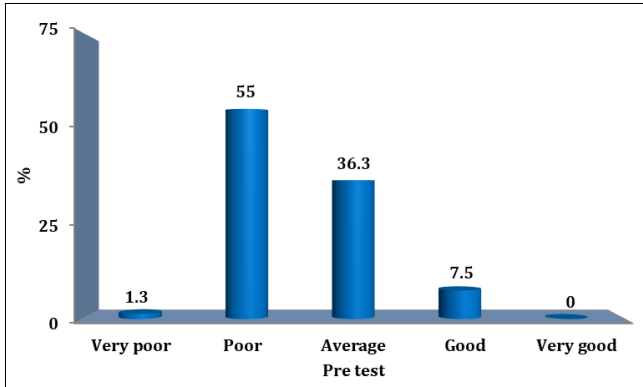


Fig 2

Post-test knowledge Score after structured Teaching program on Cardiovascular assessment denoted increased score with a P-Value<0.001 in both pre and post History taking and physical examination respectively.

Few study participants (21.3%) had poor knowledge in the post test compared to (55%) who had poor knowledge in the pretest, (50%) had average Score compared to (36.3%) in the pretest, (20%) had good Score compared to (7.5%) in the pretest, (8.8%) Scored very good in the post-test while there was no Very Good score in the pretest knowledge Score.

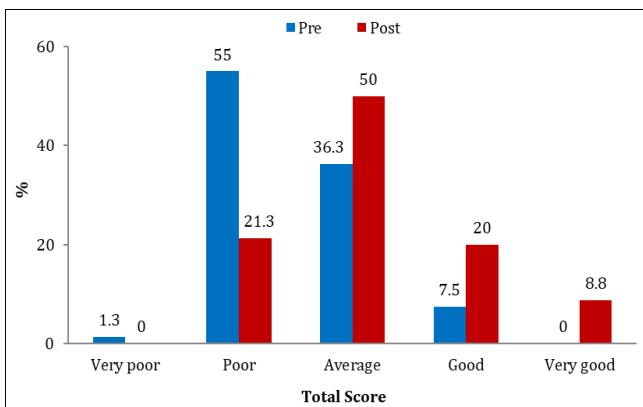


Fig 3

The Mean and SD of Pre-Test Score Was 18.85with SD 5.13 and 24.13with SD 6.231 for posttest. With the implementation of the Structured Teaching program among the Group, the Knowledge Mean Percentage and SD For Post-Test Was increased Respectively. This shows there was a significant improvement in the Knowledge of 4th Year student Nurses Regarding CVS assessment. Structured Teaching Program was highly effective in improving the Knowledge of Students.

There was No Statistically Significant Association found Between the Knowledge Scores of the Respondents and Selected Demographic Variables.

Implication of The Study

According to Tolsma (1995) the section of the research report that focuses on nursing implication usually includes specific suggestions for nursing practice, nursing education, nursing administration and nursing research

Nursing Practice

Nurses have the responsibility to improve the knowledge level of degree students. The present study will help the

nurse to know the role of structured teaching programme on knowledge regarding CVS assessment. It will help in creating the awareness among students about cardiovascular assessment and health assessment in general. CVS is one of the most important organ systems of the human body and its alteration can results in life threatening conditions.

Nursing Education

Student has to update their knowledge regarding CVS assessment and Health assessment in general of other organ system. Assessment forms the basis of patient care and problem identification of a patient as well as Nursing Diagnosis. The faculty member has to motivate the student to learn health assessment and mastering essential skills in health assessment of various organ system.

Nursing Administration

The present study proposed to help the Nursing faculty administrator to create awareness about the role of structured teaching programme on knowledge regarding CVS among degree students to give standard and quality nursing care to the patient in clinical setting.

Administrators and faculty have to put emphasize and educate students on the role of health assessment in patient care.

Nursing Research

Evidence based Nursing practice must take higher profile in order to improve the quality life among patients. The study will be valuable reference for further research. The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted.

Recommendations

- The study can be replicated on a larger sample of student nurses in different setting for making broad generalization.
- A true experimental study can be conducted with training program health assessment on various organ system
- A study can be conducted to assess the knowledge and attitude among student nurses regarding Health assessment.
- A descriptive study to assess the knowledge and practice of student nurses regarding CVS assessment and health assessment of other organ system.
- Various teaching strategies like demonstration, video teaching regarding health assessment and its role in patient care should be utilized.

Conclusion

The results provided valuable information to the Student Nurses Regarding CVS Assessment and the Effectiveness of structured Teaching program (STP) was observed from the Results, of both Pretest knowledge and Post test Knowledge. It however revealed lack of practice on cardiovascular assessment among the study participants in which eighty (80%) reported that they had no practice on CVS assessment.

Post-Test results depicted that there was a significant increase in the level of Knowledge of Student Nurses. The study should be used as a basis of assessing knowledge of another organ system in different setting and population.

However, the study provides a foundation to alert nurses in clinical setting to ensure student develop good attitude and perception on the importance of Assessment of patient in order to provide quality nursing care.

Further studies should be done to explore knowledge and practice on assessment of different organ system for staff nurses in various clinical setting.

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