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Effectiveness of Educational Intervention on Clinical Competency in Performing Cardiovascular Assessment Among the Third Year B.Sc Nursing Students in MTPG & RIHS, Puducherry

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ABSTRACT

Background: Health Assessment Competency is an important component of professional nursing practice. Cardiovascular Assessment includes History Collection and Physical Examination is the most important domains to evaluate the patients' risk for heart diseases. The aim of this study was to evaluate the Effectiveness of Educational Intervention on Clinical Competency in performing Cardiovascular Assessment among the Third year B. Sc Nursing students and to associate the Post Test level of Clinical Competency score with their selected demographic variables. **Materials and Methods**: A Pre experimental research design with one group Pre test and Post Test design was adopted for this study. The total numbers of 74 students were selected for this study by using Convenience sampling technique. All the subjects were evaluated by Observational checklist comprising of demographic variables and checklist related to History collection, Physical Examination regarding cardiovascular system. **Results and Conclusion:** The results predict that in post test, most of them 44(59.46%) students had average level of Clinical Competency and 30(40.54%) students had good level of Clinical Competency. The results shows that in History Collection, after the administration of Educational interventions most of them 39(52.70%) had good level of Clinical Competency and 35(47.30%) had average level of Clinical Competency and in Physical Examination most of them 66(89.19%) had average level of Clinical Competency, 6(8.11%) had good level of Clinical Competency and 2(2.70%) students had poor level of Clinical Competency in Physical Examination in Performing Cardiovascular Assessment. The researcher concluded that Educational Intervention on Cardiovascular Assessment was clinically significant.

1. INTRODUCTION

Assessment denotes the process of obtaining information about the patient, situation analysis, understanding of the causes or risk factors of particular conditions and their potential problems. **[1]** Cardiovascular diseases are the world leading killer disease. Some of the factors which will make the cardiovascular disorders, Overweight, central obesity, high Blood Pressure, dyslipidaemia, diabetes and unhealthy dietary patterns are the main risk factors. **[2].** According to the recent statistics heart diseases accounting for 16.7 million or 29.2% total global deaths in 2003.In India in past five decades rates of coronary diseases among urban population have risen from 4% to 11%. The World Health Organization estimates that 60% of the world's cardiac patients will be Indian by 2010 **(World Health Organization). [3]**

Competency is the capacity to do something successfully and efficiently **(Oxford dictionary 2015).** Health Assessment Competency is an important component of professional nursing practice. Cardiovascular Assessment includes History Collection and Physical Examination which are the most important domains to evaluate the patients' risk for heart diseases. **[4]**

Most of the Studies had shown that Nursing Students are anxious and worried when practically attending the patients, it is perceived to be lack of enough skills, lack of enough knowledge and lack of preparation. In nursing ethics, students are required to master basic fundamental procedures such as health Assessment before practicing among patients **(**Mohammad Khoran, **2018). [5]**

The Nursing Students' Assessment competency is concerned around the world and the complexity of assessing clinical competence of students' has challenged educators for decades. Clinical Competency was recognized that there is inconsistency among Assessment methods and tools between countries and institutions. **[6]**

The Nursing Students are the future nurses they should have adequate skills the Cardiovascular Assessment and develop Competency in performing Cardiovascular Assessment which help to identify the Cardiac diseases earlier. Each Nursing Student, Nursing Officers and Resident Doctors must be aware of the importance of correlating Clinical findings after a Complete Cardiovascular Assessment. **[7]**

Educational Intervention is one of the effective teaching methods which will enhance the students to learn more competently. Studying Cardiovascular Assessment helps the students to identify the problems of heart functions.

Lecture cum demonstration increases the practicability and competency level of the students regarding cardiovascular assessment. Most of the studies shows that lecture cum demonstration are one of the important and best methods in teaching learning process. **[8]**

This made the researcher to conduct the study on the effectiveness of educational intervention on clinical competency in performing Cardiovascular Assessment and to associate the post test level of clinical competency with their selected demographic variables.

2. MATERIALS AND METHODS

2.1. Study Design

The Quantitative research approach and pre-experimental with one group pre and post test design was selected for this study.

2.2. Study Participants

A total number of 74 samples who fulfilled the inclusion criteria were selected from third year B. Sc Nursing students in Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry by Convenience sampling technique. The study was conducted for the period of 4 weeks. The tool used in this study was observational checklist and was structured in 3 sections. Section A consists of demographic variables, section B consists of steps related to History collection of Cardiovascular System and section C consists of steps related to Physical examination of Cardiovascular System. The Third year B. Sc Nursing Students, who were willing to participate in the study and able to understand and speak Tamil and English were included in the study. The Third year B. Sc Nursing Students, who were absent for a longer period of time and with physical illness were excluded from the study. Approval and Ethical Clearance was obtained and The Formal Permission was obtained from the Dean of Mother Theresa Post Graduate and Research Institute of Health Sciences, Gorimedu, Puducherry. Oral and Written Informed Consent was obtained.

2.3. Data collection

The main study was conducted for 4 weeks. On the first day of data collection, the objective of the study was explained and informed written consent was obtained from the Third year B. Sc Nursing Students in clinical area. Socio demographic data was collected. Then, during pre test each student were instructed to perform cardiovascular Assessment for the assigned patients which was observed by the Researcher in order to evaluate the clinical competency level by using prepared Observational checklist in clinical area. On each day 4-5 students clinical competency was evaluated in the Morning and on the same day the Educational Intervention regarding Cardiovascular Assessment was given with the PowerPoint presentation with laptop. Subsequently, the students were gathered to cardiac ward and Medical ward where the researcher Demonstrated Cardiovascular Assessment on the patient. Educational Intervention took nearly 1 hour. Then next day, In addition to that prepared cardiovascular assessment format was provided to each student and instructed to perform cardiovascular assessment daily to make them to be well-versed in performing Cardiovascular Assessment and the practice was monitored continuously for 7 days by the researcher. The collected data was analyzed by using descriptive and inferential statistics.

RESULTS AND DISCUSSION

The result highlights that in the post test, after the administration of Educational Interventions most of them 44(59.46%) students has average level of Clinical Competency and 30(40.54%) students had good level of Clinical Competency regarding cardiovascular assessment. These findings were consistent with the study conducted by **Aparna Pandey (2018)** where the result showed that 85.5% and 14.5% of the study participants had inadequate and fairly adequate skills and another similar study **[9] Gagan Sharma (2018)** which showed that 88.33% and 11.6% of the study participants had average practice and good practice**.[10]**

In the Pre test most of the Third year B. Sc Nursing Students 53(71.62%) had poor Clinical Competency and 21(28.38%) had average level of Clinical Competency in History Collection of performing Cardiovascular Assessment. Whereas in the Post Test, after the administration of Educational interventions most of them 39(52.70%) had good level of Clinical Competency and

35(47.30%) students had average level of Clinical Competency in History Collection in performing Cardiovascular Assessment.

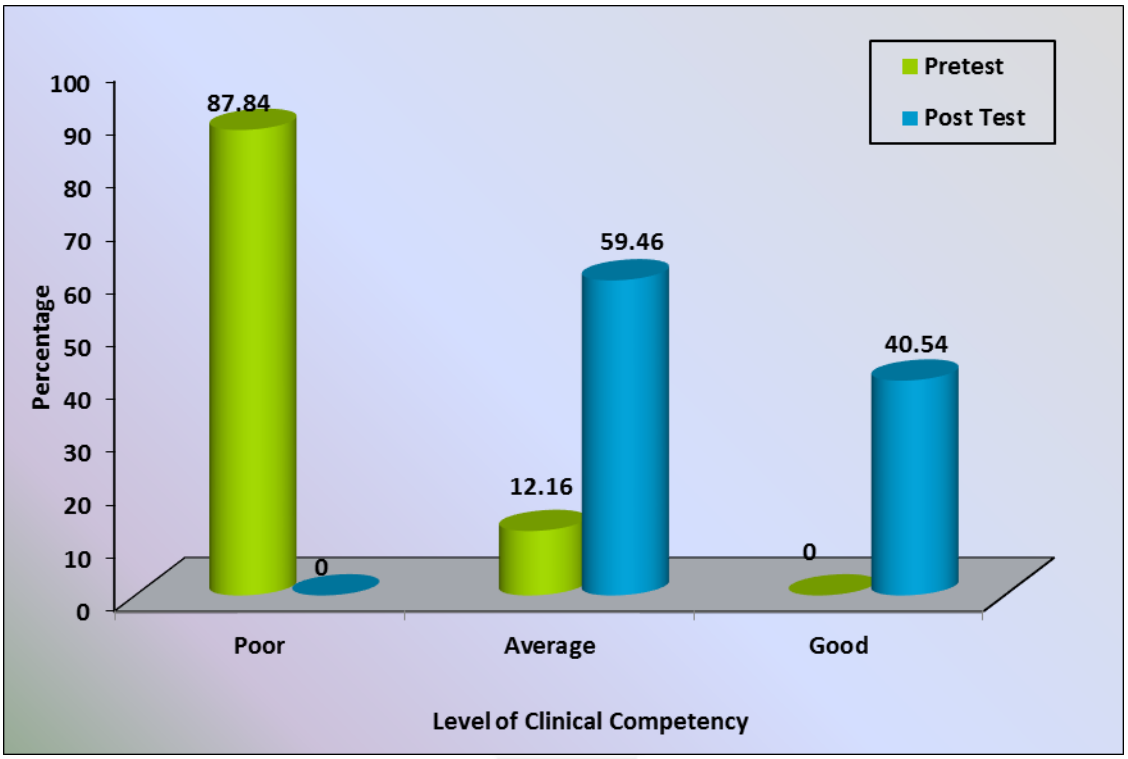

Fig: -1 Percentage distribution of Pre test and Post Test level of Clinical Competency in performing overall Cardiovascular Assessment among the Third year B. Sc Nursing Students

In the Pre test all of the Third year B. Sc Nursing Students 74(100%) had poor Clinical Competency in Physical Examination in performing Cardiovascular Assessment. Whereas in the Post Test, after the administration of Educational Interventions most of them 66(89.19%) had average level of Clinical Competency, 6(8.11%) students had good level of Clinical Competency and 2(2.70%) had poor level of Clinical Competency in Physical Examination in Performing Cardiovascular Assessment.

TABLE 1: Comparison of Pre test and Post Test Clinical Competency scores in performing overall Cardiovascular Assessment among the Third year B. Sc Nursing Students.

N = 74

Clinical Competency	Mean	S.D	Mean Improvement Score	Paired 't' Test Value
Pre test	27.62	12.99	**59.67**	**t = 29.893**
Post Test	87.29	13.49	**(42.6%)**	**p = 0.0001, S*** **

***p<0.001, S – Significant**

The study findings showed that the overall Cardiovascular Assessment Pre-test Mean score of Clinical Competency was 27.62 with Standard deviation of 12.99 and the Post Test Mean score was 87.29 with Standard deviation of 13.49. The Mean Improvement Score was 59.67 (42.6%).

The calculated paired 't' test value of t = 29.893 was found to be statistically significant at p<0.001 level and this clearly indicates that the Educational Interventions on performing Cardiovascular Assessment among the Third year B. Sc Nursing Students was found to be Effective in increasing their level of Clinical Competency in the Post Test.

TABLE 2: Comparison of Pre test and Post Test Clinical Competency scores in performing overall Cardiovascular Assessment among the Third year B. Sc Nursing Students. N = 74

Clinical Competency	Assessment	Max. score	Clinical Competency score Mean ± SD	Mean Difference of Clinical Competency gain score with 95% CI	Percentage of Clinical Competency gain score with 95% CI
History Collection	Pre test	60	17.19±7.71	24.2 (22.05 – 26.38)	40.4% (36.7-43.9%)
	Post Test	60	41.40±6.43		
Physical examination	Pre test	80	10.43±6.71	35.5 (32.94 – 37.98)	44.4% (41.2% -47.5%)
	Post Test	80	45.89±9.23		

In history collection the Pre test Mean score of Clinical Competency was 17.19±7.71 and the Post Test Mean score was 41.40±6.43. The Mean improvement score was 24.22 i.e., 40.4%. In physical examination, the Pre test mean score of Clinical Competency was 10.43±6.71 and the Post Test mean score was 45.89±9.23. The mean improvement score was 35.5 i.e., 44.4%.

The demographic variables Gender and Co-morbid illness among family members had shown statistically significant association with Post Test level of Clinical Competency in History Collection at $p<0.01$ level. The demographic variable age had shown statistically significant association with Post Test level of Clinical Competency in Physical Examination at $p<0.001$ level.

Thus, the **hypothesis H1** which states that there will be significant difference between the Pre and Post Test scores of Competency level among the Third year B. Sc Nursing Students was **accepted.**

Thus the **hypothesis H2** which states that there will be significant association between the Post Test score of level of Clinical Competency regarding Cardiovascular Assessment among the Third year B. Sc Nursing Students with the selected demographic variables was **accepted** with regard to demographic variable in terms of **Age, gender and family history of heart diseases.**

CONCLUSION

Hence this study results shows that Educational Intervention on Cardiovascular Assessment was effective in improving Clinical Competency of the students.

The study concluded that Educational Intervention and Continuous Practicability definitely improve the Clinical Competency among B. Sc Nursing Students. Hence regular Teaching interventions and advanced Simulation Techniques must be conducted to improve the level of Competency regarding Cardiovascular Assessment. In future certain Practice and Attitude and similar intervention needed to improve the Clinical Competency on Cardiovascular Assessment among Nursing Students.

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