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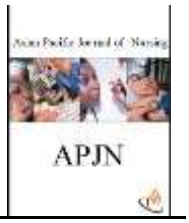

EFFECTIVENESS OF COMPETENCY BASED TRAINING (CBT) ON LEVEL OF KNOWLEDGE AND COMPETENCY REGARDING HEALTH ASSESSMENT AMONG FIRST YEAR BSC NURSING STUDENTS

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ABSTRACT

A Pre- and Post quasi-experimental design was undertaken to assess the Effectiveness of Competency Based Training (CBT) on level of Knowledge and Competency regarding Health Assessment among First Year BSc Nursing Students in selected nursing colleges, Tiruttani. A Convenient Sampling technique was used to adopted to accomplish the objectives of the study. The sample composed of 92 first year B.Sc Nursing students enrolled for CBT on Health Assessment Course conducted by Impetus Health care skills private limited. The tools used for this study were self-structured questionnaire for demographic data, knowledge questionnaire and health assessment evaluation (OSCE) check list for six core skill .The competency based training was conducted for 6 days to cover all 92 students in the class. The post evaluation of knowledge and skill was conducted after 15 days of training using knowledge questionnaire and health assessment evaluation OSCE tool for six core skills. The study illuminated that in pre-test most of the students had inadequate knowledge (97.8%) whereas in the post-test most of the students had gained adequate and moderately adequate knowledge (27.2%, 66.3%) on health assessment. It is inferred that the pre-test mean knowledge score was 6.12 whereas in the post test the mean knowledge score was 12.79. Mean difference score was 6.674 which shows statistically very high level of significant difference at $p \leq 0.0001$.The majority of the first year students gained excellent competency on various components of health assessment such as Breast exam (85.9%), Abdomen exam (85.9%), reflexes (94.6%) and Auscultation of heart and lung sounds (88.0%) and only few students' competency level was between good to needs improvement. The majority of students obtained excellent competencies in the areas of ear examination and neck examination

Key Words : Competency Based Education , Health Assessment, Nursing Students.

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INTRODUCTION

The contemporary medical function and nursing disciplines have been substantially broadened by modern notions like health concept, quality of life, and health quotient. In the meantime, nursing education and clinical care make use of a wide range of technologies and instructional methods. Colleges and universities, which serve as the primary institutions for the training of nursing professionals, have progressively advanced the idea that "high-quality, comprehensive nursing talents should be cultivated and trained to meet the industry demand.

Given that clinical practice accounts for half of the bachelor's program in nursing, the practice setting provides nursing students with a substantial learning environment. As a result, a significant portion of teaching activities involve preparing students for meeting with actual patients requirements in the healthcare setting. Competency-based training programs for healthcare

professionals will ensure acquiring essential skills required to deliver quality nursing care.

In nursing process, health assessment is a crucial step, these competencies are essential for identifying the health issues and care requirements of patients, which is essential for establishing nursing care plans and nursing actions. Higher levels of health assessment proficiency would improve nurses' capacity to track changes in patients' health and help them reach more accurate conclusions. The quality of patient care would increase and results would be better with a more accurate assessment.

Competency-based education (CBE) is gaining increasing emphasis in nursing. Professional organizations and regulatory bodies are calling for a fundamental change in nursing education and a greater focus on improving clinical judgment. As nursing education programs begin to transition to competency-based education (CBE), it is important to understand the dynamics of this curriculum transformation.

Need for the Study

Clinical education is an essential part of nursing and midwifery education. Nursing educators try to create professional learning behaviors in nursing students and respond appropriately to specific clinical situations. There is a trend in nursing education to adopt competency-based education (CBE) models. Anima and McCoy define competency as acquiring integrated knowledge, skills, values, and attitudes required for a competent nurse. In addition, the development of nursing students with professional competence is one of the aims of nursing education. Simulation provides standardization of cases, promotes critical thinking, allows supervision of patient care, provides immediate feedback, and helps students to assimilate knowledge and experience [1]

Though health assessments are performed regularly and routinely, they must be conducted and documented with great thoroughness and attention to detail. Nursing assessments inform each step of the patient's care plan. Therefore, nurses have a tremendous responsibility to ensure they have necessary competency sets to perform accurate evaluations for all patients. The implementation of simulation enables students to practice their clinical and decision-making skills for some significant issues they may face in their daily work. The protected environment and the sense of security enhance students' self-esteem and confidence, thus promoting learning. In this way, the gap between theory and practice is substantially reduced [2]

Objectives:

1. To assess the pre and posttest level of knowledge regarding health assessment among first year nursing students
2. To evaluate the effectiveness of competency based training program on knowledge and competency on health assessment among first year nursing students
3. To correlate level of knowledge and competency on health assessment among first year nursing students
4. To associate the posttest level of knowledge and competency of first year nursing students with their selected demographic variables

Methodology

Modified Ludwing Von Bertanloffy's General System was adopted to demonstrate the implementation of competency based training on Health Assessment for first year nursing students. A pretest post-test design and convenient sampling technique was adopted to accomplish the objectives of the study. The sample composed of 92 first year B.Sc Nursing students enrolled for CBT on Health Assessment Course conducted by Impetus Health care skills private limited.

The tools used for this study were self-structured questionnaire for demographic data, knowledge questionnaire and health assessment evaluation (OSCE) check list for six core skills. The knowledge questionnaire consisted of 20 structured questionnaires of multiple choice questions each question had only one correct answer and each correct answer carried 1 score, wrong answer- no score. The score was graded as inadequate knowledge (<50%), moderately adequate knowledge (50-70%) and adequate knowledge (71-100%). The core skills of health assessment evaluated consists: Ear examination (Score: 24); neck examination (Score: 20); breast examination (Score: 18); auscultation of heart and lung sounds (Score: 24); abdomen examination (Score: 18) and neurological reflexes (Score: 16). The overall score for health assessment was 120. The score was graded as excellent (81-100%), good (71-80%), satisfactory (61-70%), needs improvement (51-60%), unsatisfactory performance (0-50%).

Data collection

To assess the pretest knowledge the B.Sc nursing first year students were given the structured questionnaires for 30 minutes. Then, competency based training on health assessment was delivered to the students for two days each batch size of 31 students on the mentioned topics by Impetus Health care skills private limited. Low and high fidelity manikins such as Clinical female and male pelvic trainer, Nursing SIM Annie for auscultation of heart and lung sounds, Breast examination manikin and abdominal examination manikin were used for skill training. The equipment such as knee hammer and tuning fork was also used for examination of reflexes and Ear examination. The competency based training was conducted for 6 days to cover all 92 students in the class. The post evaluation of knowledge and skill was conducted after 15 days of training using knowledge questionnaire and health

assessment evaluation OSCE tool for six core skills. The collected data was tabulated and analyzed.

Results

In pretest, most of the students had inadequate knowledge (97.8%) whereas in the posttest most of the students had gained adequate and moderately adequate knowledge (27.2%, 66.3%) on health assessment.

It is inferred that the pre-test mean knowledge score was 6.12 whereas in the post test the mean knowledge score was 12.79. Mean difference score was 6.674 which shows statistically very high level of significant difference at $p \leq 0.001$.

The competency level of first year B.Sc nursing students on components of health assessment was analyzed. Majority of the students gained excellent competency on various components [Breast exam (85.9%), Abdomen exam (85.9%), reflexes (94.6%) and Auscultation of heart and lung sounds (88.0%)] of health assessment and only few students' competency level was between good and needs improvement. With regard to ear examination and neck examination almost all the students gained excellent competency. About 98.9% of students gained excellent competency on overall health assessment.

The correlation between posttest knowledge score and posttest competency score was computed using Karl Pearson Correlation Coefficient. Positive correlation was established between knowledge and competency with an 'r' value of 0.246, 0.048 at $p \leq 0.05$ level of significance respectively.

There is no significant association of selected demographic variables with knowledge and overall competency. Whereas, there was a significant association with abdomen examination and mother's occupation at $P<0.001$, auscultation of heart and lung sounds with age group at $P<0.05$ level and reflexes with religion at $P<0.05$ level.

Table 1:

Level of Knowledge	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Inadequate Knowledge	90	97.8 %	6	6.5%
Moderately adequate knowledge	2	2.2%	61	66.3%
Adequate Knowledge			25	27.2 %

Table-2:

Health Assessment	Mean	SD	"t" Value
Pretest overall Knowledge	6.12	1.857	30.678***
Posttest overall Knowledge	12.79	2.318	
Mean difference	6.674	2.087	

TABLE 3:

Level of competency	Ear Exam		Neck exam		Auscultation of heart and lung sounds		Breast exam		Abdomen Exam		Reflexes	
	N	%	N	%	N	%	N	%	N	%	N	%
Excellent	92	100	92	100	81	88.0	79	85.9	79	85.9	87	94.6
Good	-	-	-	-	5	5.5	7	7.6	8	8.6	4	4.3
Satisfactory	-	-	-	-	6	6.5	5	5.4	2	2.2	1	1.1
Needs improvement	-	-	-	-	-	-	1	1.1	1	1.1	-	-
Unsatisfactory performance	-	-	-	-	-	-	-	-	2	2.2	-	-

TABLE-4

Health Assessment	Mean	SD	Karl pearson's correlation and coefficient	P - Value
Knowledge	12.79	2.318	r=0.246	0.048 *
Competency	111.59	5.563		

Discussion

In the context of patient care planning, the health assessment process allows nursing students to identify the patient's unique needs and concerns, as well as potential barriers that may affect patient compliance and outcomes. According to recent research evidence, the perceived barriers to performing physical assessment skills among nursing students include lack of confidence, lack of preparedness, worry, and anxiety. [3] studied the assessment of barriers to physical assessment skills among

nursing students in Saudi Arabia found that 66.02% of students were not confident in their ability to perform physical assessments in the classroom, and 60.19% were not confident in their ability to perform physical assessments in clinical settings.

Acquiring nursing skills is essential, but implementing them in a real life situation is the most important aspect of training. Skills must be performed by hand and must be performed accurately, without errors. In order for students to perform clinical skills effectively, competency-based training should be introduced during their early stages of clinical training.

The study illuminated that in pre-test most of the students had inadequate knowledge (97.8%) whereas in the post-test most of the students had gained adequate and moderately adequate knowledge (27.2%, 66.3%) on health assessment. It is inferred that the pre-test mean knowledge score was 6.12 whereas in the post test the mean knowledge score was 12.79. Mean difference score was 6.674 which shows statistically very high level of significant difference at $p \leq 0.001$. [4] conducted a quasi-experimental study to evaluate competency based education model on cognitive & clinical skills of nursing students at Iran. The findings showed that competency-based education is effective in improving the cognitive and behavioural skills of students. The mean score of cognitive skills of the experimental group in post-test, as well as their behavioural skills in all cases and in general were significantly higher than the control group. The clinical competence of the experimental group students was significantly greater than the control group.

Our result showed that majority of the first year students gained excellent competency on various components of health assessment such as Breast exam (85.9%), Abdomen exam (85.9%), reflexes (94.6%) and Auscultation of heart and lung sounds (88.0%) and only few students' competency level was between good to needs improvement. The majority of students obtained excellent competencies in the areas of ear examination and neck examination. [5] studied a quasi-experimental study on introduction of competency based learning among final year BSc nursing students at Pune. Post test was conducted on knowledge, attitude and core competencies immediate after intervention. The findings showed that knowledge and skills were markedly improved.

Another study was conducted by [6]**,** evaluated the usefulness of simulation to understand the various respiratory and cardiovascular sounds among first year MBBS students it was concluded that simulation based learning is useful additional tool to learn clinical examination of cardiovascular and respiratory system. It helps first MBBS students to improve their clinical knowledge, skills and attitude. [7] evaluated the use of a high-fidelity simulator to develop nursing students' skills in auscultating lung and bowel sounds. By incorporating a high-fidelity simulator into the process of nursing education, integration of knowledge and skills can be achieved.

Our study is also supported by [8] conducted a literature review survey on the training of nursing students in physical assessment and their confidence and competence in performing the physical assessment skill. This study provides valuable insight into physical assessment competence and the barriers to its effective performance in order to better prepare student nurses to perform physical assessment in a clinical setting. [9] illuminated in the study that 78.4% of nurses said they would like to be trained in physical examination techniques. [10]

concluded in the study that simulation training was more effective than regular training in increasing the confidence of nursing students in applying physical examination skills.

Based on research findings and a literature review, it has become increasingly evident that nursing students need to improve their cognitive and skills levels in health assessment. Competency-based training can enhance their competence and awareness, allowing them to enter the clinical setting with the appropriate skill level.

Conclusion

Research results showed that a competency-based training program on health assessment help nursing students develop psychomotor skills, build confidence, and overcome fear while performing nursing procedures. A study such as this illustrates how innovative CBT learning creates a bridge between student knowledge and practice, which ultimately improves students' clinical skills, resulting in increased professional knowledge, improved performance, as well as professional growth.

Nursing students must therefore undergo competency based training in health assessment prior to clinical practice in order to improve their clinical competencies without exposing real patients to experimental risks.

Implications

Competency-based training focuses on the development of specific skills and competencies, ensuring that nursing students acquire the practical knowledge and skills necessary to achieve focused learning outcomes. It recognizes each student's unique strengths and weaknesses, allowing for an individual learning plan tailored to each student's needs. The training emphasizes hands-on experience and learning, which is essential for nursing students to develop the skills they need to succeed in the profession. Competency-based training emphasizes assessing each student's skills and abilities, not just knowledge, to ensure that nursing students are prepared to provide quality patient care.

Recommendations

- Competency-based education followed by exposure to clinical practice can help nursing students develop a positive attitude about conducting health assessments, and appropriate monitoring of students during clinical practice can help prevent errors and ensure patient safety.
- Integrating competency based training into BSc Nursing curriculum shall help to minimize the gap between theory and practice.

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