

A Study to Evaluate the Effectiveness of Problem Based Learning (PBL) Module on Knowledge and Attitude among Nursing Students

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Abstract

Objective: To evaluate the knowledge and attitude regarding Problem Based Learning (PBL) Module among Nursing Students, Associate knowledge and attitude scores with selected demographic variables, Correlate the knowledge and attitude of Nursing students who undergone to Problem Based Learning activities.

Background: The Problem based learning (PBL) is require for present situation in all aspects of competence care providers and research action tool for upgrading deep knowledge about clinical subjects¹.

Method and Materials: Research approach: Qualitative approach, **Research design:** Quasi-experimental design. **Sampling:** The Final year students of B.Sc nursing and GNM whose are final year traing in the clinical area. The Number of students was influenced by the nature of the design and number of respondents. The purposive sampling technique was adopted. It is the participant sense of reality and truth therefore the researcher recruited 40 samples foe the study

Results and Discussion: The findings revealed that majority of the students (72.3%) belongs to 18-21 years, 78.2% of the students were from rural background and 21.8% of the students were from urban background. The study revealed that 70.4% of the students had moderately adequate knowledge, 25% had inadequate knowledge and only 4.6 % of nursing students had adequate knowledge in the pretest. The study revealed that 48.8% of the nursing students had adequate knowledge, 6.6% of had inadequate knowledge and only 44.6% of nursing students had moderately adequate knowledge in the posttest. The present study revealed that overall 38.7% of the nursing students had a favourable attitude, 31.7% of the nursing students had moderately favourable attitude and 30 % of nursing students had unfavourable attitude in the pretest. The study revealed that overall 68.5% of the nursing students had favourable attitude, 31.5% of nursing students had moderately attitude in the posttest. There was no significant difference between mean pretest knowledge score ($t=1.813, p>0.05$). But there was significant difference between mean post-test knowledge score ($t=10.814, p>0.05$). The results implied that the Problem based learning module was effective sense of performance in improving knowledge among nursing students. There was no significant association between pretest knowledge level among nursing students and age, religion, years and working areas. There was association between pretset levels of knowledge among nursing students regarding Problem based learning module with their source of information. It was found that statistically significant at $p>0.05$.

Conclusion: The nursing students had average knowledge and attitude before planned Problem Based learning module and then the source of information had impact on knowledge and attitude of nursing students. There was no significant association between pre-test knowledge level among nursing students and age, religion, years and working areas. There was association between pre-test levels of knowledge among nursing students regarding Problem based learning module with their source of information. It was found to be statistically significant at $P>0.05$.

Keywords: Effectiveness, Problem Based Learning Module, knowledge, Attitude, Nursing students

Introduction

PBL's impact on the attendants' learning objectives is largely positive but not entirely. It is found that PBL contributes to the higher performances of Nursing students on the final examinations compared with those who received traditional regular teaching. PBL education on standardized examinations were not consistent. PBL is based on or situated in healthcare and activates prior knowledge that is then elaborated in small group discussion. The process facilitates learning and knowledge retrieving. Retrieving knowledge and applying it to a clinical setting is an important step to help a novice nurse to become an expert. Rapidly advancing medical technology and science requires nursing education to become "hybrid," combining old teaching methods with innovative methodologies^{2,3}.

Need and significance

Nursing education has begun to shift from teacher-centered learning to student-centered learning where students are required to actively seek knowledge. Instead of training for the nurses who only can see one problem, Problem Based Learning offers a more holistic perspective of the problem in its own contextual nursing environment. Problem Based Learning fits well with the concepts of the nursing metaparadigm (person, environment, health, and nurse). The PBL process addresses each problem with a focus on person (problem embedded in that person), the specific environment that affects the person's health, particular health related issues, and the nursing strategies/management executed to promote a person's health. In addition, the PBL process is a learner-centered process that triggers free requisition for knowledge by the learner⁴.

PBL has been incorporated into some nursing programs but its effectiveness has not yet been reported. One study showed that PBL will produce proactive learning and suggested that nursing education should incorporate PBL. Beers and Bowden reported that those nursing students taught with PBL had significant improvement in long-term knowledge retention compared with their counterpart. One study indicated that Korean nursing students who were taught by PBL had better test performance than the traditional group. The purpose of this study was to evaluate the educational benefit on those who were taught in traditional didactic methods versus PBL⁶.

Objectives

Assess the knowledge and attitude regarding Problem Based learning Module among Nursing Students

Associate knowledge and attitude scores with selected demographic variables.

Correlate the knowledge and attitude of Nursing students Problem Based Learning skills.

Hypothesis

H₁: There will be significant association knowledge regarding PBL Module with demographic variable.

H₂: There will be significant association of attitude regarding PBL Module with demographic variable.

Conceptual Framework

The study is focused on assessing the knowledge and attitude regarding Problem Based learning module among nursing students who performed in Problem Based Learning skills. The present study is intended to assess the knowledge and attitude of nursing students regarding Problem Based Learning in nursing. The conceptual framework for the present study was based on Bertalanffy's model. The phases of the model are assessment, input, process and output. The theory is concerned with changes due to interaction between the factors in a particular situation. There is a continuous interaction between students and teacher⁷.

Review of Literature

PBL is a small group teaching method that was developed to help learners acquire the knowledge, skills, and attitude so significant proportion of a course or curriculum. The first definition of PBL was given by Barrows and Tamblyn(1980) "the learning that results from the process of working toward the understanding or solving a problem". PBL is student (learner)-centered approach that fosters learners to search, combine between theory and practice by utilizing knowledge and skills to evolve a viable solution to the problem⁶

Nursing education must keep up with the rapidly changing medical landscape to support the competences of nurses in the areas of critical thinking, problem solving, and creativity. Problem-based learning (PBL)

provides an appropriate strategy for nursing education innovation. Nursing curricula based on PBL remain in the growing stage. The critical events in the process included: (1) nurturing key tutors; (2) using PBL teaching methods in an elective course--Oncology Nursing, and designing a new elective course--Symposiums Regarding Clinical Cases; (3) holding conferences inside and outside the school to promote PBL teaching methods; (4) linking e-learning and PBL teaching methods; (5) conducting PBL research; (6) establishing a committee of PBL, objective structured clinical examination, and teaching material review for the College of Nursing; and (7) setting up a required course--Nursing Ethics. The approach helps students to cope with the changing medical landscape. Furthermore, tutors and teachers develop adequate PBL teaching skills. Moreover, learning in PBL helps students share one's ideas with each other that improves thinking and deepens understanding. PBL creates opportunities for students to interact with the teacher and their peers, which further promotes their conflict resolution skills as well as facilitates a greater student motivation, broadens the use of a variety of learning resources and encourages team building and group working, self-directed work, and communication skills¹⁴. Furthermore, PBL gives room to students to search for knowledge and information to solve problems, thus allowing them to learn and acquire the problem solving skills. In addition, when students solve such problems, they generate hypotheses and face multiple alternatives or solutions to the problem in which they should choose the best one from these alternatives or solutions; thus, such students can acquire decision-making skills. Decision-making is an essential aspect of management, and a vital ability for the practice of nursing that enables nurses to perform their complex responsibilities. Decision-making is a behaviour displayed when selecting and implementing a course of action from among alternatives with the purpose of dealing with a particular situation or problem¹³. Furthermore, decision-making is a process that chooses a preferable option or a course of actions from a set of alternatives based on given criteria or strategies. It is the process of examining possible options, comparing them, and choosing a course of action. Decision-making skills are enhanced and developed through a process of decision-making. Firstly, one should identify the problem or the opportunity. Then, he/she should think up alternative solutions. After that, he/she should

evaluate the alternatives and select a solution. To ensure the success of implementation, there is a need to do two things: plan carefully and be sensitive to those affected. While evaluating the decision made, if the action does not work, one can give it more time, change it slightly, try another alternative, or start over again⁸.

Numerous studies indicate that the process of learning is different in PBL and PBL challenges students to become self-directed life learners. Few studies have demonstrated the effectiveness of PBL in an undergraduate nursing program on student test performance. This paper reports the effectiveness of PBL by comparing the test performances from the PBL group and the traditional group in an undergraduate nursing program¹⁰.

Problem based learning is a strategy that enhances student's ability to critically apply cumulative knowledge to actual clinical problems. It necessitates collaborative student effort to analyse and solve unfolding clinical problems that are fluid and reflect real life situations. The authors describe an approach developed to generate PBL scenarios and guidelines that may be however, in reality is PBL utilised by clinicians as a method of clinical teaching in health professional programs¹².

Methods and Procedures

Research approach: Qualitative approach,

Research design: Quasi-experimental design.

Study Settings: The study was conducted in selected colleges of Nursing and Hospitals in East Godavari district, Andhra Pradesh.

The Nursing students of BSc and GNM programme were adopted for the study. The number of students was influenced by the nature of design and number of respondents.

Sampling:

The purposive sampling technique was compromised of respondents who are likely to be able to provide information and the phenomenon under study. The nursing students were targeted as a sample to respond questionnaire.

The identified participants were then approached by researchers and requested to participate in the study.

Written consent was taken from the students to maintain confidentiality of the study. The sample size for qualitative research was not predetermined and therefore sampling was done until saturation.

The Final year students of B.Sc nursing and GNM whose are final year training in the clinical area. The Number of students was influenced by the nature of the design and number of respondents. The purposive sampling technique was adopted. It is the participant sense of reality and truth therefore the researcher recruited 40 samples for the study

Criteria for sample selection

Inclusive criteria: Nursing students who were available at time of data collection and who attended the seminar. Who has understood better English and willing to participate in the study.

Exclusion criteria: Nursing students who has through about previous knowledge on Problem Based Learning skill

Description of the tool

The structured questionnaire consisted of three sections.

Demographic data: It included age of the students, medium of instructions, education of parents, education type, duration of the course and previous source of information.

Questionnaire: There were multiple-choice questions regarding Problem Based Learning Module.

Likert attitude scale: The likert attitude scale consisted of 15 items of Problem Based Learning Skills.

Validity of Tool: The self-administered structured knowledge questionnaire attitude scale and structured psychomotor module are given to expert and got suggestion and modification were accepted and incorporated.

Reliability of tool:

Reliability of the questionnaire and attitude scale computed by applying split half method using karl pearson coefficient formula i. e $r = 0.91$ which shows tool was internally consistent.

Data collection:

Data was collected through the depth in questionnaire about knowledge and attitude scale basis for convergence on truth because it was hoped that true information could be sorted out, a researcher with an opportunity to probe more on the issues under study.

The data was collected thoroughly with permission from the participant they wished to make any comments pertains to the study topic. Following this, the researcher thanked each participant for their time and valuable contribution. The data collection totally took six weeks of time. As there were no overlaps of staff between departments and the departments were far apart contamination between subjects were negligible¹⁰

Data Analysis

The data analysis included descriptive and inferential statistics. The following plan of analysis was developed with opinion of experts. The analysis would be done based on objectives and hypothesis to be tested. The demographic data would be analysed in terms of descriptive statistics. The analysis was made based on objectives and assumptions.

The transcribed data and written notes made by researcher followed questionnaire distribution the means to begin exploring the data obtained. The data was analyzed descriptive and analytical way of transmission of data¹⁰.

Results and Discussion

The findings revealed that majority of the students (72.3%) belongs to 18 -21 years, 78.2% of the students were from rural background and 21.8% of the students were from urban background.

The study revealed that 70.4% of the nursing students had moderately adequate knowledge, 25.0% had inadequate knowledge and only 4.6 % only the nursing students had adequate knowledge in the pretest.

The study revealed that 48.8% of the nursing students had moderately adequate knowledge, 6.6% had inadequate knowledge and only 44.6 % only the nursing students had moderately adequate knowledge in the post test.

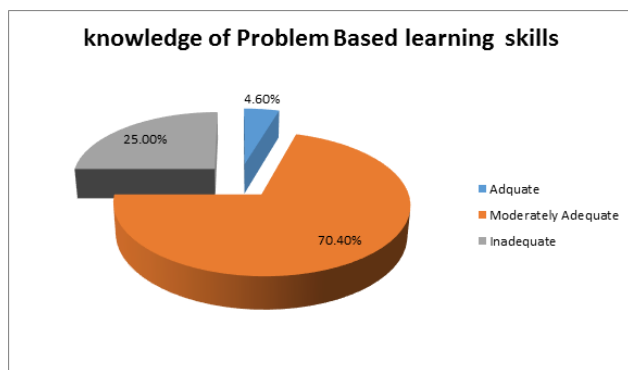


Figure 1; Overall Knowledge of Nursing students regarding problem based learning skill module in pre test(N=40).

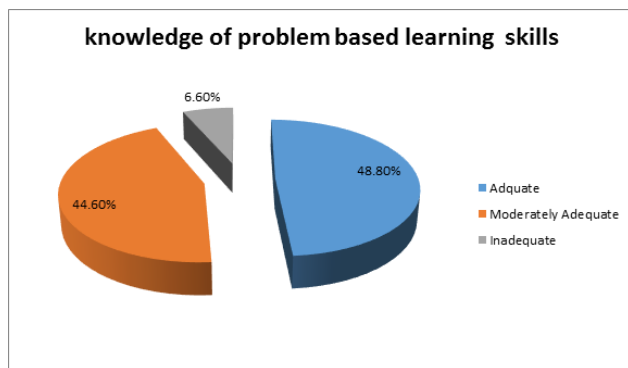


Figure 2; Overall Knowledge of Nursing students regarding problem based learning module in post test(N=40).

The present study revealed that overall, 38.7% of the nursing students had a favorable attitude, 31.7% of the nursing students had moderately favorable attitude and 30% of the nursing students had unfavorable attitude in the pretest

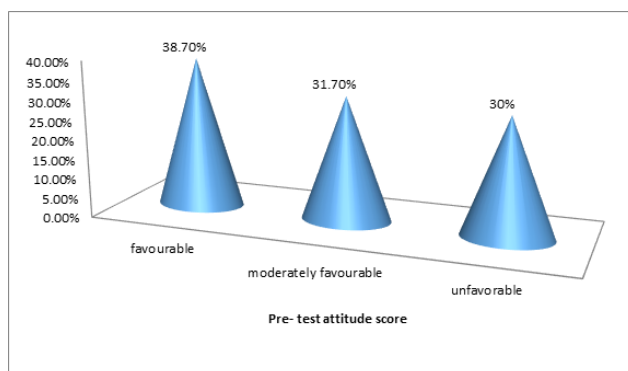


Figure 3; Overall Attitude of Nursing students regarding Problem based learning module in pre test (N=40).

The study revealed that overall, 68.5% of the nursing students had a favorable attitude, 32.5% of the nursing students had moderately favorable attitude in the post test.

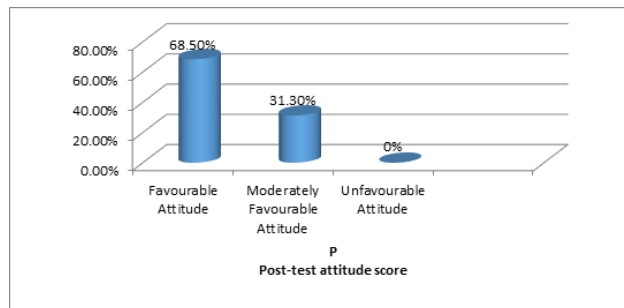


Figure 4; Overall Attitude of Nursing students regarding problem based learning module in post test(N=40).

Table 1: Comparison of pretest and post test level of knowledge among nursing students(N=40)

Knowledge score	pretest	Post test
Mean	14.0	21.2
Standard deviation	3.1	1.8
Upaired t,df, p value	1.670,5,0.100	-10.914,5,0.000

There was no significant difference between mean pre test knowledge score ($t=1.670, p>0.05$). But there was significant difference between mean post test knowledge score ($t=10.914, p<0.05$). The results implied that the structured psychomotor clinical module was effective improving knowledge among nursing students.

There was no significant association between pretest knowledge level among nursing students and age, religion, years and working areas. There was association between pre test level of knowledge among nursing students regarding structured Problem Based learning module with their source of information. It was found to be statistically significant at $p<0.05$.

Conclusion

The nursing students had average knowledge and attitude before problem based learning module, then the source of information had impact on knowledge and attitude of nursing students. There was no significant association between pretest knowledge level among nursing students and age, religion, years and working areas. There was association between pre test level of knowledge among nursing students regarding problem based learning module with their source of information. It was found to be statistically significant at $p < 0.05$.

Conflict of Interest: None

Source of Funding: Self

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