

# Effect of Problem Based Learning on Nursing Students' Clinical Decision Making and Learning Satisfaction

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**Abstract:** Introduction: PBL is a student-centered, inquiry-based method of instruction that guides students to solutions of real-world problems through cooperative group work and is purported to build critical thinking skills. Subjects and method: in this study the samples were selected from II year Basic B.Sc. Nursing students of S.R.M.M. College of Nursing. The samples were 40 experimental and 40 control. The study was conducted in Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences (DU), Sawangi (Meghe) Wardha. Research Design: An experimental, design were used. Sampling Technique: Purposive sampling. Results: The comparison of Experimental Group and Control Group of nursing students, Mean, standard deviation and mean difference values are compared and student's unpaired 't' is applied at 5% level of significance. The tabulated t-value for  $n=(40-1)+(40-1)$  i.e. 78 degrees of freedom was 1.98. The calculated 't' value are much higher than the tabulated value at 5% level of significance. In addition the calculated 'p' values was  $<0.05$  which is ideal for any population. Hence it is statistically interpreted that the students who received instruction through PBL method scored significantly higher than the students who received instruction through conventional didactic lecture. Conclusion: Effectiveness of Problem Based Learning (experimental group) and conventional didactic lecture (control group) of teaching. Found that the students who received instruction through PBL method scored significantly higher than the students who received instruction through conventional didactic lecture.

**Keywords:** Problem Based Learning, Conventional and Didactic Lecture

## 1. Introduction

PBL is guided by a constructivist framework that emphasizes problem solving should occur in the same environment as the problem, the presence of the problem is what starts and guides the learning process and determines how the problem is solved, and knowledge is expanded through group discussion and collaboration.

The PBL method of instruction focuses on several of the expected outcomes of undergraduate education particularly the skills to critically think. This review article evaluates evidence for whether PBL is an effective instructional method to improve critical thinking in nursing students compared to traditional forms of education.

Today's new graduate nurses are exposed to increasingly demanding and complex acute care environments that require an ability to effectively think and reason to provide quality patient care. The nursing process is a problem-solving process used in the nursing profession to achieve positive patient outcomes and patient satisfaction across the life-span. The nursing process was introduced in the 1950s and is based on nursing theory and nursing research. The nursing process is a five-step process that combines the art of nursing with scientific methods based on systems theory that involves systematic collection of data, analysis of data collection to identify problems, planning and prioritizing needs, implementation, and evaluation of intervention as related to client outcomes.

## Aim

At assessing the Effect of Problem Based Learning on Nursing Students' Clinical Decision Making and Learning Satisfaction.

## 2. Objectives of the study

To investigate the effectiveness of problem-based learning on nursing students at Clinical Decision Making. To assess learning satisfaction of the nursing students at Problem Based Learning

## 3. Materials and Methods

- 1) **Research Design:** An Quasi-Experimental,
- 2) **Sampling Technique:** Purposive sampling technique.
- 3) **Sample:** In this study the samples were selected from II year Basic B.Sc. Nursing students of S.R.M.M. College of Nursing. **Sample Size:** The samples were 40 control and 40 experimental.
- 4) **Setting of the Study:** Smt. Radhikabai Meghe Memorial College of Nursing Datta Meghe Institute of Medical Sciences (DU), Sawangi (Meghe) Wardha

## 4. Method of Data Collection

- The subjects were explained about the nature and purpose of study.
- A written consent was obtained from the participants prior to their recruitment in the study.

- They were assured about the confidentiality of the data.
- The multiple choice question (twelve questions) in that item no. 2, 6,9,11 related to application of knowledge (Clinical Decision Making), was administered to all the students before and after the educational intervention.
- The experimental group was taught by the Problem Based Learning Method (four module i.e. Benign Prostatic Hyperplasia, Hypertension, Myocardial Infarction, Diabetes Mellitus,).
- The control group was taught by the Conventional Didactic Lecture (four topics i.e. Benign Prostatic Hyperplasia, Hypertension, Myocardial Infarction, Diabetes Mellitus).
- Feedback and Students Satisfaction Survey was also administered to both groups at the end of the interventions.

**Ethical consideration:** The study was carried out after obtaining permission from the Institutional Ethics Committee (IEC), Datta Meghe institute of medical sciences (Deemed university) Sawangi (Meghe), Wardha.

## 5. Observations and Results

- Assessment of pre test and post test score of experimental group : In pre test majority 15(37.5%) participants were having poor level of test score, 14(35%) had average, 9(22.5%) had good and 2(5%) had excellent level of test score. After implementation of PBL method, post test shows that majority 25(62.5%) participants were having good level of test score and 15 (37.5%) had excellent level of test score
- Evaluation of effectiveness of problem based learning method: the comparison of pre test and post test scores of experimental group. In table item no 2, 6, 9, 11 items are related to application of knowledge (Clinical Decision Making) and in post test students mean percentage was higher than the pre test mean percentage. Hence it is statistically interpreted that the PBL method was effective to increase in test score on nursing students at clinical decision making.
- Assessment of pre test and post test score of control group. In pre test majority 21(52.50%) participants were having average level of test score, 12(30.00%) had poor, and 7(17.5%) had good level of test score. after implementation of conventional didactic lecture, post test shows that majority 24(60.00%) participants were having average level of test score and 15 (37.5%) had good level of test score
- Effectiveness of Problem Based Learning (experimental group) and conventional didactic lecture (control group) of teaching. Found that the students who received instruction through PBL method scored significantly higher than the students who received instruction through conventional didactic lecture.
- Comparison of Feedback of experimental group (PBL method) and (control group) Conventional didactic lecture. It is statistically interpreted that the PBL method of teaching was having more positive effective than Conventional didactic lecture.
- Comparison of Students Satisfaction Survey (SSS) of experimental group (PBL method) and control group

(conventional didactic lecture). Results showed that the students were more satisfied with the PBL method of teaching as compare to Conventional didactic lecture.

- The effectiveness of the intervention was calculated using the following formulae:

I) **Absolute learning gain** = [(% post test)-(% pre test)]

II) **Relative learning gain** = [(% post test)-(% pre test)] / (%pre test) X 100

III) **Normalize gain g**= [(% post test-% pre test)] / [100-(% pre test)]

Effectiveness of intervention was determined if the range of 'Normalize gain g' is as follows:

- Low : 0-0.29
- Medium : 0.30-0.69
- High : 0.70-1.0

Normalize gain 'g' in **PBL** method was 0.59 and therefore considered moderately effective.

Normalize gain 'g' in **conventional didactic lecture** method was 0.16 and therefore considered low effective.

## 6. Discussion

In our study the mean post test score of experimental group (PBL method of teaching) was 9.07 and mean post test score of control group (conventional didactic lecture) was 5.75. It is interpreted that the PBL method of teaching was effective than conventional didactic lecture. **Hwang and Kim** were compared PBL with traditional lecture methods in learning cardio-respiratory nursing, PBL participants gained more knowledge and had higher motivation towards learning than those who had lectures.

## 7. Conclusion

The following conclusions can be drawn from the findings stated above.

- Nursing students' clinical decision making is enhanced through the use of Problem Based Learning modules as an instructional approach in teaching and learning sound nursing judgments.
- Nursing students find that learning through realistic and clinically-focused Problem Based Learning modules is an effective instructional method that increases their clinical-decision making skills.

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Tables:

Table 1: Absolute learning gain

Table 2: Relative learning gain

Table 3: Normalize gain g

**Table 1:** Absolute Learning Gain in experimental group and control group

Groups	Absolute Learning Gain
Experimental group	35.21%
Control group	10.21%

**Table 2:** Relative Learning Gain in experimental group and control group

Groups	Relative Learning Gain
Experimental group	87%
Control group	27%

**Table 3:** Normalize Gain 'g' in PBL and Conventional Didactic Lecture

Groups	Normalize gain g'
Experimental group (PBL Method)	0.59
Control group (Lecture method)	0.16