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Perception of Students and Faculty on Problem Based Learning in Proficiency Certificate Level Nursing Program

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ABSTRACT

Background: Patan Academy of Health Sciences intended to implement problem based learning in proficiency certificate level nursing program who have just completed grade 10. Presently in Nepal, the available literature on use of problem based learning as teaching learning methods is limited to undergraduate medicine who have passed 10+2 or equivalent. It was conducted to measure the perception of students and faculty on problem based learning in nursing program.

Methods: Nursing faculty who have been involved in teaching learning of nursing curriculum were trained to conduct problem based learning and write problem based learning case. Prior to run problem based learning case, students were also oriented for the problem based learning process. A 44 students and seven faculty returned the filled data collection tool.

Results: Both the students and tutors perceived that the problem based learning is an effective teaching learning method. They also found that the attributes of problem based learning such as self-directed learning, collaborative learning, team work and fun learning. Students were eager to have more problem based learning session in their curriculum. Faculty also perceived that problem based learning can be a better teaching learning methods and it can be implemented in proficiency certificate level nursing.

Conclusions: This study shows the acceptance of problem based learning as a teaching learning methods in proficiency certificate level nursing program by both the students and faculty.

Keywords: Nursing curriculum; PBL; perception.

INTRODUCTION

Problem Based Learning (PBL) in nursing education has shown to improve students' performance in their clinical practice¹. PBL also has numerous advantages over traditional teaching learning methods^{2,3} as it not only fosters students' deep learning, but also help them to learn generic skill such as team work, good communication, self-directed learning etc..^{4,5}

Having implemented PBL successfully as the major

teaching learning method in undergraduate MBBS program of School of Medicine, Patan Academy of Health Sciences (PAHS) intended to explore the feasibility of using PBL in Proficiency Certificate Level (PCL) nursing curriculum. Available literature on PBL in Nepal is limited to MBBS program in cohort of students who have passed 10+2 or equivalent.⁶ No studies have been done in Nepal where PBL has been used as teaching learning method in Nursing, especially for students who have just completed Grade 10. This study aimed to measure the perception of students and faculty about PBL in PCL

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nursing program.

METHODS

This was a descriptive study measuring the perception of PCL Nursing students and their faculty about the use of PBL in PCL nursing curriculum. The participants for the study were the first year PCL nursing students who had joined Nursing School after completing Grade 10 and Nursing faculty responsible for teaching PCL students. The students were orientated to the rationale and process of PBL. A 45 students were divided into five PBL groups with nine students in each group.

There were seven Nursing faculty, five of whom were involved actively in the PBL process and two observed the process. They had undergone training in PBL process as per PAHS faculty development criteria. Health Professions Education Unit (HPEU) PAHS coordinated workshops to empower nursing faculty on tutoring and case writing to conduct the PBL. Nursing faculty were trained on rationale of PBL teaching, tutorial process and evaluation on 28-29 December 2017. It was followed by an observation of a complete PBL cycle in medical undergraduate program of PAHS. PBL case writing workshop was conducted on 8th April 2018 before writing a PBL case for PCL nursing course. PBL case was prepared by faculties of school of medicine and school of nursing with reference to curricular objectives of PCL nursing curriculum.

The semi-structured data collection tool for this study was adapted from a validated feedback form that was used to measure the perception of students of PBL in MBBS curriculum at PAHS.⁷ All the 45 students and the seven faculty were invited to participate in the study. Informed consent was taken from all the participants. The data collection tool was administered at the end of one PBL cycle which included three PBL sessions of two hours each and one wrap-up session of an hour intervened with the required self-study hours. To anonymize the data, participants name were not mentioned in the data collection form. The semi-structured data collection tool has two components. Quantitative component constitutes questionnaire which were designed based on the PBL attributes and perception were measured in a Likert scale (1: strongly disagree, 2: disagree, 3: agree, 4: strongly agree). Qualitative component included open ended questions.

Quantitative data obtained from the scoring of participants in a Likert scale Data was entered in Microsoft excel. Microsoft excel data was exported to Tableau Public 2020.1, an open software for data

visualization, and data was analyzed and results were generated. Qualitative data that were generated from open ended questions were analyzed by coding and categorizing into different themes. Such themes, based on the open ended questions, were related to the attributes of PBL to know the perception of students and faculty. The Institutional Review Committee of PAHS gave ethical approval for the study.

RESULTS

A 44 students and seven faculty returned the filled data collection tool. One of the questionnaire was not received from a student. During data cleaning, it was found that four students did not tick one of the items in questionnaire each on critical thinking, self-directed learning, identifying the strength and weakness, and exploring different resource materials. This null data was excluded during calculation of percentage and mean.

In general, the perception of students and faculty towards PBL was found to be highly affirmative which was indicated by markedly greater positive response (Figure 1) and mean of Likert score greater or equals to three in each items of the questionnaire (Table 1). All the faculty scored positively to all the items while only few students scored negatively to some of the items in questionnaire (Figure 1). The highest negative score was observed on the item "I prefer more PBL sessions in PCL nursing course" (9.8%) followed by "PBL imparts better content knowledge of the topic" (7.8%); "PBL encourages students' to learn in context" (7.8%); PBL helps students to identify my strength and weaknesses (6.0%) and other negative score were ranged from 2.0% to 3.9% (Figure 1). But, all the students scored positively in items related to self-directed learning, retention of knowledge and communication skill (Figure 1). Students and faculty agreed that learning objectives of curricular content could be achieved through PBL (Table 1: Item 1). They also agreed that PBL provided platform for learning in context and imparted better content knowledge with its enhanced retention (Table 1: Item 2, 3, 4). All felt that PBL promoted students participation in learning along with critical thinking, reasoning skill, self-directed learning and exploring resources on their own (Table 1: Item 5, 6, 7, 8, 13).

Students and faculty agreed that PBL imparted generic skills such as group skill and communication skill (Table 1: Item 9, 10). They also perceived that PBL helped students to reflect their weakness and strength (Table 1: Item 11). Moreover, both students and faculty perceived that PBL is fun learning and preferred PBL in curriculum

delivery (Table 1: Item 12, 14).

The response to open ended questions i.e. “What went well?”, “What could be improved?” and “Anything else?” were also consistent with quantitative findings (Table 2). The responses of most of students and faculty to question “What went well?” was that PBL enhanced group work, communication skills and active participation. Some students and faculty also identified other attributes of PBL such as increased retention of knowledge, self-directed learning, critical thinking, deep learning, creativity, reflective learning and fun learning (Table 2) which were similar to the rating for PBL attributes in quantitative findings (Table 1).

Regarding the response to the question “What could be improved?” most students perceived that there needs to be active and equal participation along with a respect for peer views during discussion. Some of the students felt that they did not have enough time for self-study to have good discussion during PBL season. Tutors realized that there should be improvements in tutor guiding skill, learning resources, learning environment and timely feedback (Table 3).

The response for open ended part “anything else?”, students showed their willingness to have more PBL.

“There should be more PBL in nursing because learning will be no more boring and we can get clear

understanding from PBL.” (S12)

“Overall it was good experience in PBL classes, we want more PBL class in our nursing curriculum.” (S33)

Similarly, faculty also commented that PBL is more effective than lecture and more PBL sessions needs to be conducted. Further they expressed that it can be implemented not only in PCL nursing but also in bachelor nursing programs.

“It is more effective than lecture.” (F2)

“We should conduct more PBL.” (F5)

“It can be implemented in other programs too i.e. in Bachelors of Nursing and BSc Nursing.” (F1)

Some faculty also mentioned that PBL inculcates the habit of self-directed learning.

“Students develop their knowledge by self-directed learning and knowledge seeking habit too.” (F4)

Faculty were also impressed to observe how students actively discussed the case and presented the learning object after their self-study. One of the comments from a faculty was the issue of validity of content that students discussed in the PBL sessions as students could be misled during discussion.

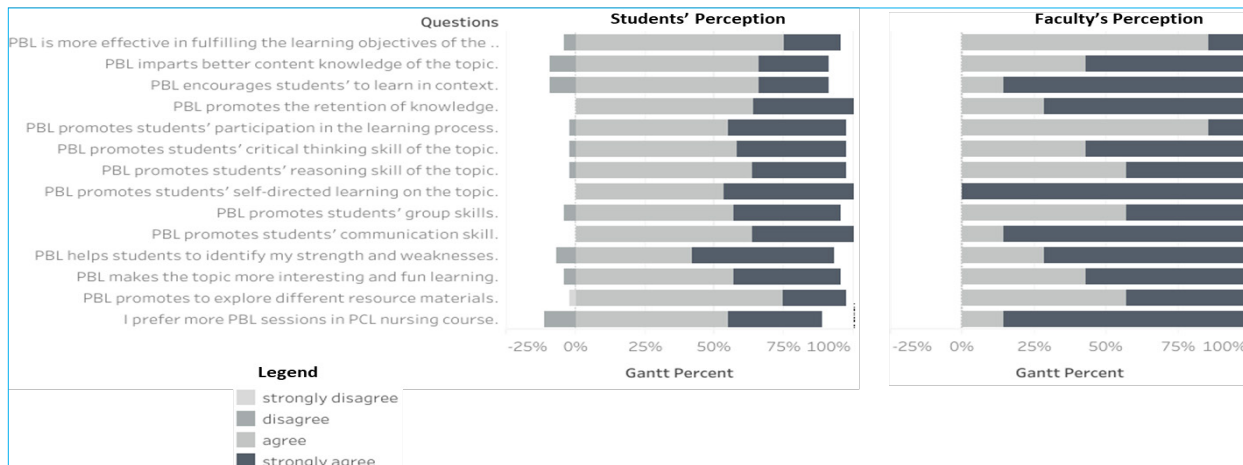


Figure 1. Percentage of students and faculty scoring positively or negatively on PBL.

Table 1. General perception of the students and faculty on PBL.

SN	Items	Perception(Mean ±SD)	
		Students (n=44)	Faculty (n=7)
1	PBL is more effective in fulfilling the learning objectives of the topic.	3.2±0.5	3.1±0.4
2	PBL imparts better content knowledge of the topic.	3.2±0.6	3.6±0.5
3	PBL encourages students' to learn in context.	3.2±0.6	3.9±0.4
4	PBL promotes the retention of knowledge.	3.4±0.5	3.7±0.5
5	PBL promotes students' participation in the learning process.	3.4±0.5	3.1±0.4
6	PBL promotes students' critical thinking skill of the topic.	3.4±0.5	3.6±0.5
7	PBL promotes students' reasoning skill of the topic.	3.3±0.5	3.4±0.5
8	PBL promotes students' self-directed learning on the topic.	3.3±0.6	4.0±0.0
9	PBL promotes students' group skills.	3.4±0.5	3.4±0.5
10	PBL promotes students' communication skill.	3.4±0.5	3.9±0.4
11	PBL helps students to identify my strength and weaknesses.	3.4±0.6	3.7±0.5
12	PBL makes the topic more interesting and fun learning.	3.3±0.6	3.6±0.5
13	PBL promotes to explore different resource materials.	3.2±0.5	3.4±0.5
14	I prefer more PBL sessions in PCL nursing course.	3.2±0.6	3.9±0.4

Table 2. Response to question "What went well?"

SN	Identified attributes of PBL	Students (n)	Faculty (n)
1	Group work	30	5
2	Communication skills	16	3
3	Active Participation	25	4
4	Enjoyable and interesting learning	16	1
5	Express own views, ideas and knowledge	11	1
6	Increased retention of knowledge	11	1
7	Identify own strength and weakness	6	-
8	Self-directed learning	5	2
9	Critical thinking	2	2
10	Deep learning	1	1
11	Increase curiosity and creativity	1	1
12	Lifelong learner	-	1

5	Tutor guiding skill	-	2
6	Learning Resources	-	4
7	Specific objectives	-	1
8	Learning environment	-	3
9	Timely feedback	-	1
10	Tutor guide	-	5

Table 3. Response to question "What could be improved?"

SN	Needs improvement	Students (n)	Faculty (n)
1	Active and equal participation	16	1
2	Respect peers view	5	-
3	Adequate self-study hours	3	1
4	Time limitation	3	1

DISCUSSION

Both the students and tutors appreciated the effectiveness of PBL over conventional didactic methods and expressed their preference to have more PBL in the delivery of curriculum; this is similar to other studies.⁸ Although the implementation of PBL in PCL nursing students was thought to be difficult due to the young age and immaturity of students, our study showed the encouraging acceptance of PBL by both the students and faculty which is consistent with the findings by others that learning techniques effective for adults is not necessarily for adults only but is also applicable to younger people.^{9, 10}

Most of the students mentioned a need of improvement in active and equal participation maintaining a respect for peer's view. Similarly, one of the faculty also identified that active and equal participation needs to be improved. As this was their first PBL, the likely reason could be that the discussion is at the early phase of group dynamics¹¹ which could be improved by the timely feedback from tutor and student's self-reflection.¹² Evidently, in this study one of the faculty also acknowledged the need of

effective feedback to improve group dynamics. Another study also found PBL to be stressful at the initial stage due to the new approach where students were less prepared to different learning environment and are to direct their own learning with faculty just facilitating the learning.¹³

Although there was an allocation of 9 hours of self-study in an academic schedule which is about 1.5 times of the PBL session, some students found that allotted self-study hours was not adequate for the preparation. Therefore, it seems necessary for students to consider the non-academic hours for the preparation for PBL to complete the learning issues as other studies have shown that students make more preparation for PBL in non-academic hour than the scheduled self-study hours.¹⁴

Two of the faculty also realized the need for an improvement in tutor's skill in guiding students during PBL session. It could be anticipated since nursing faculty were tutoring independently for the first time and it would need more tutoring opportunity to enhance the tutoring skill. Similar experiences has been accounted in novice tutors.¹⁵ Furthermore, all the faculty mentioned that tutor guide needs to be improved and one of them specifically mentioned that learning objectives needs to be more specific in tutor guide. Despite many challenges during the tutoring process, this tutoring experience, indeed, has led the faculty to self-realize the specific need in an improvement in tutor guide and tutorial skill as described in a learning process in Kolb learning cycle¹⁶ which indeed is of great importance in enhancing the tutorial skill of the faculty.

Most of the tutors were concerned about the learning environment and learning resources. Since most of learning in PBL is made through self-directed learning, access to appropriate learning resource is important.¹⁷ As PBL has been introduced for the first time, preparation of appropriate learning environment and adequate learning resources would not have been optimal. This indeed needs to be addressed when PBL would be implemented during curriculum delivery.

The main limitation of the study is that these inferences were drawn from a perception obtained by implementing single PBL case tutored by novice faculty for the students for the first time. Although the highest negative perception on an item "I prefer more PBL sessions in PCL nursing course" was about 9.8% which was comparable to the other study done in Hong Kong (12%)¹⁸ and Taiwan (9%),¹⁹ given the nature of Asian students who are enculturated from a young age not to be outspoken²⁰, this observation could be underestimated. This could

be validated by measuring a perception after running a regular PBL.

Faculty, who had been involved only in traditional teaching learning methods before, were astonished to witness the students proactive learning being actively involved in the discussion, listing learning issues and participating in presenting learning issue prepared through self-directed learning. Therefore, amidst a sparse literature in the implementing PBL in nursing curriculum that even in students who have just passed class 10, this study provides novel findings and paves a way in implementing PBL in PCL nursing education of Nepal where traditional didactic teaching learning methods predominates. Moreover, PBL provides suitable platform to integrate curricular content with the clinical condition²¹ which further enhances students' learning and the retention of knowledge.²² However, its effectiveness is yet to be measured which would only be possible upon the completion of implementing PBL in whole PCL nursing curriculum. Since, PAHS has successfully implemented PBL in the medical undergraduate curriculum^{7, 23}, the experiences gained during this process would be instrumental in the effective delivery of PBL in PCL nursing. Some issues have been identified in this study which includes learning environment and learning resource like PBL rooms, adequate necessary books in library and good internet access. However, overwhelming students' positive response amidst resource constraint shown in this study provides adequate ground for academic administration to take the concept forward to implementation level.

CONCLUSIONS

The receptive perception of both students and faculty on PBL in PCL nursing curriculum suggests that PBL could be implemented as teaching learning method in PCL nursing students.

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