

RESEARCH ARTICLE

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Experience of Dubai Pharmacy College with PBL through Students' Perception

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Abstract

Background: Problem-based learning (PBL) is a student-centered, self-directed and collaborative learning method. The implementation of problem-based learning started in 1969 and has spread since then throughout different parts of the world with variations in its implementation. In spite of its growth and advantages, there is continuing debate about its effectiveness over the conventional teaching learning methods. In Dubai Pharmacy College (DPC), the Bachelor pharmacy program follows 4-year integrated curriculum. The instructional delivery uses traditional lectures, tutorials, quiz, tests and exams and recently implemented PBL since 2008. This study was to explore the perception of DPC students about PBL sessions. **Objective:** The objectives of the study were: (i) To facilitate the development of key professional competencies and (ii) To identify problems associated with implementation of the program and attempt to provide solutions with new learning tools. **Methodology:** The students' perception was examined and assessed using a 5-point Likert scale questionnaire. **Results:** This questionnaire based cross sectional descriptive study was carried out on 170 out of 202 (84.1 %) who participated in PBL sessions. DPC found PBL session interesting and beneficial. Most students reported their participation in discussion during PBL sessions but the level of participation varied. Some of them worked hard to prepare themselves for discussion while others were relatively passive. **Conclusion:** PBL helped them with in-depth understanding of certain topics and link their basic science knowledge to clinical classes. They felt that guidance from subject specialists and well prepared facilitators of the sessions were beneficial. The students believed that repetition of triggers from year to year discouraged their active search for learning issues. Majority of the students were undecided or disagreed about the availability of adequate learning resources for their self-study. Reviewing and renewing the PBL triggers, providing guidelines for searching for resource materials and briefing the students and facilitators about the philosophy and principles of principles of PBL sessions more beneficial.

Key words: Dubai Pharmacy College, Students Perception, Problem-Based Learning Session, Pharmacy.

INTRODUCTION

PBL Problem-based learning is student-centred, self-directed and collaborative learning



method based on the principle of using problems as a starting point for the acquisition and integration of new knowledge.^[1] Researchers in medical and pharmaceutical education are becoming increasingly aware that using of a variety of teaching methods may ultimately improve retention of material, as well as enhance students' adaptability in problem-solving situations.^[1,2,3]

From Several literature reviews, advantages have been associated with the adopted method in PBL session. The beneficial advantage regarding the curriculum is that it will be inherently current and evidence-based than the traditional curriculum. Regarding the students, acquisition of retrievable and usable-robust knowledge, integration of basic and clinical science knowledge, Students will have enhanced problem-solving and clinical reasoning skill, will be more self-directed, enthusiastic learners, and graduates will be responsible learners for-life, demonstrate a more holistic approach to patient care, communication skills and motivation are some outcomes that have been associated with PBL in the literature.^[1-7]

The documented disadvantages of PBL is the increased financial and faculty time expenditure and Lower levels of content-specific knowledge.^[8,9]

PBL is a learning activity where students work in small groups as a team to work on problems identified in a case scenario. It is believed to be innovative, interactive and promote critical thinking, problem solving communication and self-directed learning.^[10-12]

The implementation of problem-based learning started in 1969 and has spread since then throughout different parts of the world with variations in its implementation. In spite of its growth and advantages, there is continuing debate about its effectiveness over the conventional teaching learning methods.^[13-14]

In Dubai pharmacy college DPC Bachelor of pharmacy degree program is a 4-year integrated curriculum. The educational drug delivery uses traditional lectures, tutorials, quiz, tests, exam and PBL has been implemented since 2008 as a learning tool. This study was conducted in October 2012. PBL is used as a learning tool to achieve the educational objectives of developing problem solving skills, knowledge acquisition, application and integration skills, communication skills, self-directed and lifelong learning attitudes, evidence-based practice, team-working and collaborative skills.^[15-17]

The PBL activity in DPC is conducted in small groups

of five students in two sessions of two hours per session weekly. A facilitator which is the instructor and the content expert will monitor the session and assess the performance of the students based on identified objectives of PBL. During first session, students are presented with a PBL trigger, which is often a problem from real world or case scenario in basic and clinical sciences. After discussion in the first session, students identify the learning issues to be worked on for a week meeting informally at their own time using many learning sources including the internet. They collaboratively prepare an oral presentation, aided with power point slides, posters or any other audio-visual aids. During the second PBL session a week later, each member of the group will then be invited to present any one of the learning issues by the facilitator. Other members contribute to active discussion by bringing up new information or by asking questions. Students who have been exposed to the PBL sessions provided feedback on this delivery system via developed designed structured questionnaire, based on students' response.

METHODOLOGY

This cross sectional descriptive study was carried out on students of DPC (first, second and third years) who have participated in PBL sessions. A total of 170 students out of 202 (84.1%) participated for the study. A questionnaire was distributed to the students first, second and third classes (75, 65 and 30 respectively) and they were asked to complete and return it within one week to one of the authors. The responses were anonymous. Questionnaire included questions on class year and other information opinion about different aspects of PBL like student interest and enthusiasm, personal satisfaction, tutors' performance during the session, availability of learning resources, classroom facilities, problems triggers and timing of sessions (See Figure 1). Opinion questions were on 5-point Likert scale, 5 for "strongly agree" and 1 for "strongly disagree". For analysis responses to statement were grouped into four, strongly agree, agree, undecided and disagree. SPSS/PC statistical package was used to analyze the data. Chi-square test for goodness of fit was done to compare differences between responses in-terms of agree, undecided and disagree for each of the opinion statements. The study was approved by Dubai Pharmacy College, Dubai, UAE.

RESULTS

Out of 202 students 170 (84.1 %) responded to the questions. See Figure 2 it shows a comparison of the three classes perception questions, from question 1 – 7 at figure 2

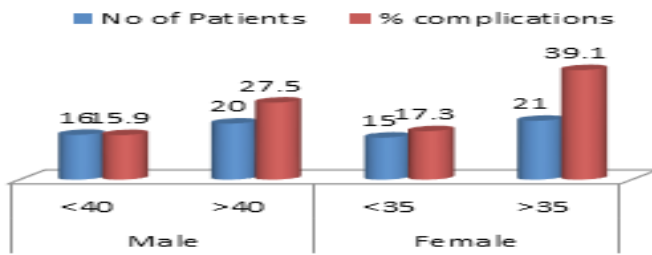


Figure 1: Conceptual frame work.

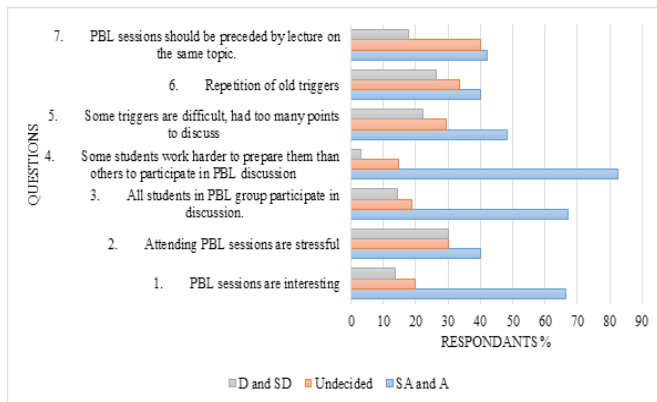


Figure 2: [A] Comparison of the three classes' perception question 1 – 7.

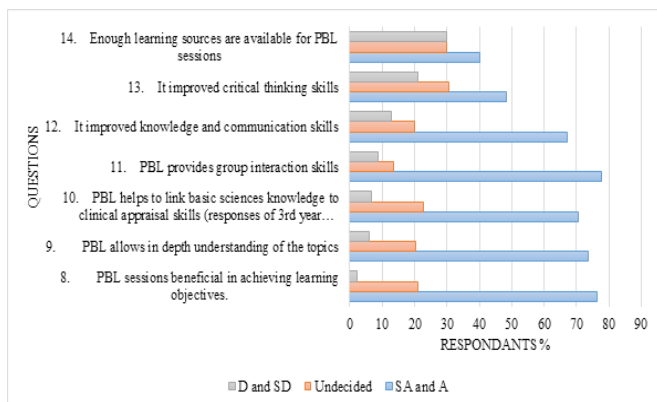


Figure 2: [B] Comparison of the three classes' perception question 8 – 14.

(A), question 8 – 14 at figure 2 (B), and question 15 – 21 at figure 2 (C), respectively. Although the majority of students perceived that PBL was interesting method of learning some of the students found it stressful commenting that it is time consuming in searching for material and due to overload of courses (2nd year class). The time allotted for each of the PBL sessions was sufficient for them. Most students reported their participation in discussion during

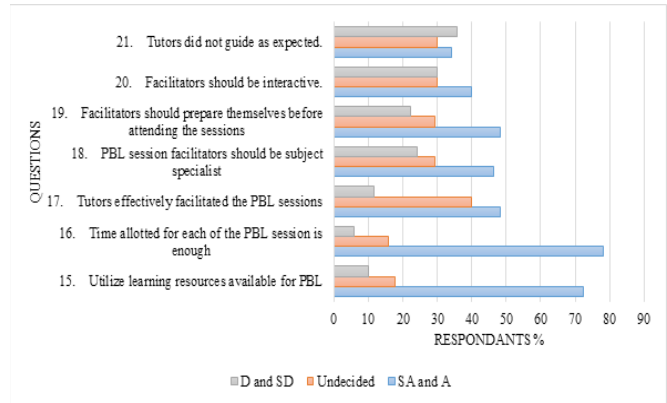


Figure 2: [C] Comparison of the three classes' perception question 15-21.

PBL sessions, but the level of participation varied. Some of them worked hard to prepare themselves for discussion while others were relatively passive. They commented that they are shy or not sure about their point of discussion. Tutors perceived that the students were worried about giving incorrect information in front of them and some were not interested in learning topics that they thought would not be examined.

In general students were of the opinion that PBL sessions are beneficial to them, it helped them in achieving their learning objectives and in-depth understanding of certain topics, linking basic science knowledge to clinical science and in developing group interaction skills. They felt that guidance from subject specialists and well prepared facilitators of the sessions were beneficial. Forty eight of the students were of the opinion that tutors effectively facilitated the sessions. The students believed that repetition of some triggers discouraged their active search for learning issues. They found some of the triggers were difficult to discuss, they wanted lectures before PBL session on the same topic, and there were too many discussion points for some of the triggers. Some students agreed that they utilized the available resources while majority of the students were undecided or disagreed about the availability of adequate learning resources for their self-study.

DISCUSSION

A statistically significant number of students found the PBL session to be an interesting method of learning. Some students agreed that attending PBL session is stressful while others disagreed. They found some of the triggers to be difficult. Nearly half of the students agreed that all the students participated in discussion as expected but others disagreed and were undecided. Moreover, they agreed that some students worked harder than others to prepare and

participate in discussions. Perhaps, participation varies from group to group and comment came from the group in which all students did not participate in discussion. Sometimes students are shy or not sure about their point of discussion. It is found in other study also that tutors perceived their students were too shy and worried about giving incorrect information in front of tutors and are not interested in learning topics that they thought would not be examined^[18]. These may also be the reasons of non-participation in discussion found in this study.

Seventy three percent of students felt that PBL sessions were beneficial in achieving their learning objectives and allowed in-depth understanding of the topic of learning. Seventy percent of third year clinical students agreed that this method helped them to link basic sciences knowledge to their clinical appraisal skills. It also provided the opportunity to improve their group interaction skills. Woodward and Ferrier^[14] reported that PBL track graduates feel their basic science preparation is not enough. But they perform. Seneviratne *et al.*^[18-19] observed that PBL helped to improve communication skills and problem-solving skills of students.

Majority of the students were undecided or disagreed about the availability of adequate learning resources but most of them willingly utilized the resources made available to them. They wanted lectures before PBL session on the same topic. They felt that the time allotted for each session is enough but there were too many discussion points for some of the triggers. In some studies it has been reported that the PBL students use textbooks, journals and other books and have informal discussions with the faculty or peers.^[19] They also reported less use of cooperative lecture notes, course syllabi and personal lecture notes. PBL track students spend more time in the library than the conventional track students. It can be proposed that some of the students felt that the notes and other learning materials that are available to them through the tutors are the resources not the books and journals. Although majority of students agreed that tutors facilitated the discussion session as expected, a large group of students disagreed or undecided. They wanted well-prepared and clinical tutors as facilitators for the PBL sessions. Students in this study confirmed that the tutors were resource persons for the sessions. Patel *et al.*^[20] concluded that the PBL students might retain errors and misconceptions on clinical care problems because of non-expert tutors leaving errors uncorrected leading to misconceptions. Silver and Wilkerson^[21] concluded that groups with expert tutors are less likely to engage in student-directed discussions and collaborative learning which is the principle of PBL. Perhaps an ideal solution for this issue is

to train more experts as PBL facilitators through regularly arranged faculty development programs development programs on PBL concepts and principles

CONCLUSION

PBL sessions conducted for DPC students were enjoyable and had learning benefits. However, some interventions may help to improve the teaching learning processes. These strategies would include more regular briefing on philosophy and principles of PBL as well as the appropriate way of conduction of PBL sessions. Efforts at reviewing the triggers and the resource materials regularly by the review committee are also recommended.

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