ORIGINAL ARTICLE

Problem Based Learning Development Program at Bahria University Medical and Dental College

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ABSTRACT

Background: Problem based learning (PBL) introduced by Howard Barrows at McMaster University in 1969 is generally regarded as an effective learning strategy with an active process of personal cognitive construction. Many medical colleges have adapted this methodology as partial or complete part of their curriculum. This strategy not only caters to the knowledge domain but also polishes attitude and soft skills in an individual.

Objectives: To evaluate efficacy of PBL development program carried out at Bahria University Medical & Dental College (BUMDC)

Methods: It was a cross sectional study conducted after completion of PBL development program at BUMDC from November 2008 till Dec 2011. Perception of faculty members about the program was acquired by purposeful sampling technique through a self reported questionnaire. All faculty members involved in PBL program were included. Their response was assessed on a 5-point Likert scale with a score of 1=strongly disagree (SDA), 2-disagree (DA), 3=neutral (N), 4= agree (A), 5=strongly agree (SA).The data was analyzed by SPSS version 15

Results: Faculty was exposed to 5 training workshops after which a total of 12, 27, 29 and 28 PBLs in 2008, 2009, 2010 and 2011 respectively were prepared and presented in structured meetings. The participants who responded (96%) were 34 lecturers, 10 Assistant Professors, 2 Associate Professors and 3 Professors. It was found that 37% of respondents who did not have prior experience of constructing PBL learnt to apply this learning strategy. They also became aware of its existence, importance, significance, relevance and corrected their deficiencies (73%).

Conclusion: The PBL development program organized through workshops helped faculty members at BUMDC to accept this teaching strategy with it true philosophy, involvement and professional commitment.

KEY WORDS: *Problem Based Learning, Facilitator's Perceptions, Structured Meetings.*

INTRODUCTION

Problem based learning (PBL) is generally regarded as an effective learning strategy with an active process of personal cognitive construction in which students are ultimately responsible of their own learning, while professors play the role of "facilitators".[1] PBL was introduced by Howard Barrows at McMaster University in 1969 after which many medical colleges have adapted this methodology as partial or complete part of their curriculum.[2] This strategy not only caters to the knowledge domain but also polishes attitude and soft skills in an individual.

The application of this strategy begins with write up of a "problem" in the form of clinical scenario which is focused on objectives derived after integration of basic and clinical sciences.[3] The facilitation is carried out in two PBL sessions. In the first session, students follow the 5-jump process to work around the given task which includes; reading the problem-if it's a written clinical scenario, identify the difficult words and give probable meaning of the identified words (Jump-1), define the problem (Jump-2), enlist and explain each phenomena (Jump-3), arrange relevant information in the form of a flow chart (Jump-4) and derive learning goals (Jump-5). Self study to find answers to the learning issues using all available sources is carried out in Jump-6.Second session (Jump-7) comprises of final discussion of the problem with reference to derived learning goals.[4,5]

It has been recognized that partial implementation of PBL is more successful in medical schools with hybrid-curriculum.[6] Bahria University Medical and Dental College (BUMDC) at the time of its inception decided to adopt a modular, hybrid system with large group interactive sessions, demonstrations, lab skills, case based sessions, anatomical models' study, seminars, interactive sessions with partial implementation of PBL. Since execution of this strategy depends upon a well designed case, student's background, and training of

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facilitators[5] and outcome can be acquired by training of those who tend to adapt this teaching tool after full commitment, fruitful discussion with peers and correction by those who know, are trained and have experience of this learning strategy.[7] The medical educationists at BUMDC attempted to train faculty members through workshops and presentations of PBL in structured meetings.[8] The purpose of the study is to assess the effectiveness of training the faculty members and the faculty members' opinions regarding usefulness of PBL programme.

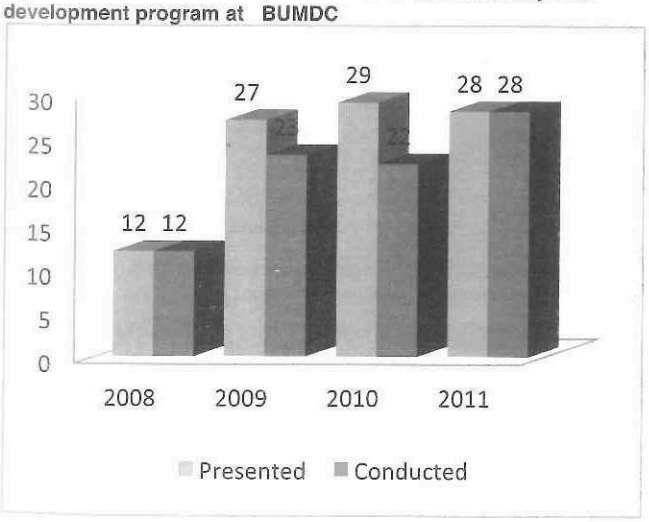
METHODOLOGY

It was a cross sectional study conducted to evaluate faculty response after completion of PBL development program from November 2008 till December 2011 at BUMDC. During this period faculty was exposed to training workshops after which they were asked to design PBL, present in structured meetings and follow the PBL process as a facilitator. The effectiveness of this program was evaluated by a 5-point Likert scale with a score of 1=strongly disagree (SDA), 2-disagree (DA), 3=neutral (N), 4= agree (A), 5=strongly agree (SA).

RESULTS

A total of five PBL workshops were attended by 51 participants during the research period. The number of PBLs presented and conducted by PBL development program is shown in (Fig 1).The faculty response about the whole process (training and presentation) was acquired from 49 (92 %) faculty members, out of which 37% of faculty members did not have a prior experience of constructing a PBL (Fig 2).

Figure 1: Number of PBLs presented and conducted by PBL development program at BUMDC



The program helped 67% faculty members to prepare and present PBLs in structured meetings and adopt this as an effective learning strategy. Faculty members (73.5%) developed awareness of PBL insinuation and valued it as an effective mode of information transfer. The PBL presentation exercise helped 73.5 % faculty members to improve deficiencies in construction of PBL case designing as well.

DISCUSSION

Faculty development, an increasingly important component of medical education since the 1990s, has been defined as a planned program designed to prepare institutions and faculty members for their various roles.[9] As Sheets and Schwenk[10] have stated, "the goal of faculty development is to improve faculty members' knowledge and skills in areas relevant to their faculty position," which include teaching, research, and administration.

Continuous changing criteria of medical education have led to a shift from teacher to student centered approach with introduction of several innovations in curricular design, implementation, and assessment strategies. The changeover from teacher to facilitator requires faculty to develop interpersonal skills in PBL facilitation through workshops, strengthening by conception and upgrading of PBL scenarios with implementation of group dynamics to given tasks.[11]

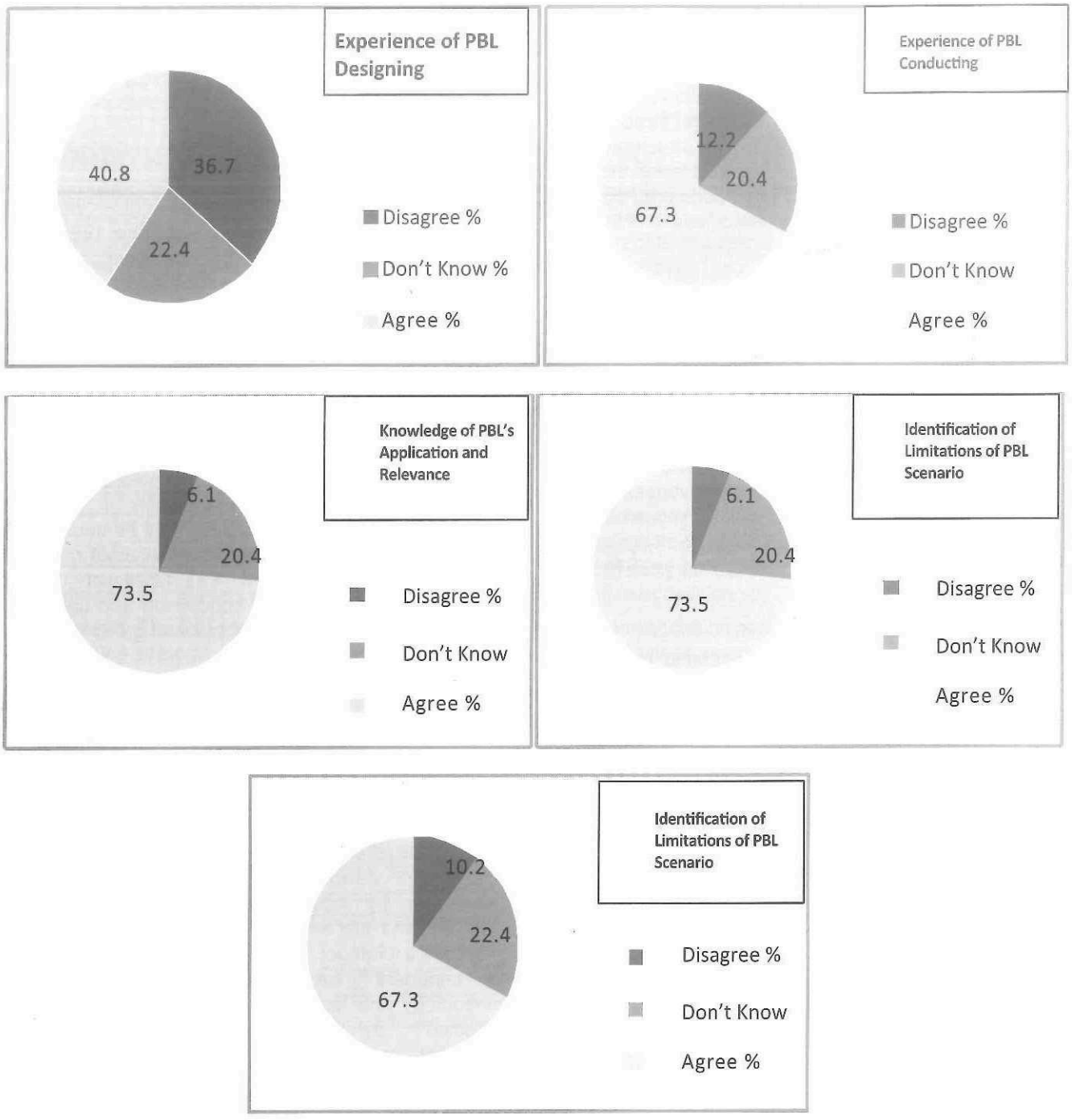
Subject specialists who have difficulty in switching from a conveyer of information to a facilitator of student learning should understand and accept the philosophy of PBL pedagogy. The learning starts with acceptance, dedication, belief in benefits of constructive learning, surrender of teaching control and change in attitude from dictation to facilitation. This educational viewpoint is likely to convene with confrontation by those who love traditional didactic curriculum and are resistant to accept the change.[12,13] To accept a change, the design of PBL workshops is very important[14] hence workshops on orientation, methodology and facilitation of PBL were planned and conducted by well known, knowledgeable, conversant and experienced PBL training experts from reputable medical universities. They were also given group projects to carry out a PBL session in seven jumps, encourage generation of discussion, welcome suggestions, avoid interruption in productive discussions and promote equal participation from all students. Other studies also emphasize on orientation of facilitators to be aware of PBL philosophy, learning objectives and focused task.[15]

Different studies have documented importance of PBL as a useful learning experience by both faculty and students.[16] The number of reviewed PBLs in this study reveals interest of all departments to understand its

rationale and accept it as a useful method in perceiving a better learning experience.

Just as the finer details of the implementation of any PBL programme are unique to each institution, so are

Figure 2: Feedback of Faculty Members on Effectiveness of PBL Development Program



the particular expectations from the facilitator. In order to convey the explicit expectations to them, organization of pre PBL meetings before each session was made. This is where the most imperative role of facilitators is defined because it is influenced by several contextual factors that include student prior knowledge, familiarity with the PBL tutorial process, problem design , department affiliation, group composition and group productivity[5,6] for which all the facilitators were trained to get the best in terms of learning.

The study is unique as it will help in the development and implementation of PBL in a medical university. This will also help students meet challenges of future medical practice. It however, it highlights the need for post PBL meetings which should be introduced to incorporate feedback from facilitators for improvement of problems

and hence learning of both teachers and students. We have the same opinion like others[17] that everyone should be involved including residents, staff, teachers, administrators, and the older medical students who will be responsible for creating an institutional culture and problem solving skills.

CONCLUSION

The PBL development program organized through workshops helped faculty members at BUMDC to accept this teaching strategy with it true philosophy, involvement and professional commitment.

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