Original Research Article

Problem-based learning as a tool in Anesthesia PG teaching - A cross sectional study

Suram Seshaiah[1*], Vaddineni Jagadish[2]

[1]Associate Professor, [2]Assistant Professor
Department of Anesthesia, Narayana Medical College, Nellore, Andhra Pradesh, India
[*]Corresponding author email: **suramseshu@gmail.com**

Abstract

Background: The teaching curriculum in anesthesia usually involves lecture-based traditional teaching and manikin simulations. Case based discussions are one are the extensively practiced PBL methods of postgraduate teaching in anesthesia. To this reason, we evaluated the effectiveness of problem-based learning methodology in anesthesia postgraduate teaching in a tertiary care teaching hospital.

Materials and methods: This cross-sectional questionnaire-based study was done to all postgraduate students in the department of anesthesia. The survey contains six questions, particularly intended to obtain the PG students view on the effectiveness of PBL in CBD, which was adopted from the Melveetil S et al study and Barrow's rating of meeting the educational objectives. All the students were given the questionnaire, and response was recorded in the form of yes/no. The questionnaire was collected anonymously and entered into Microsoft Excel software for calculating descriptive statistics such as mean, standard deviation (SD) and percentages.

Results: A total of 32 anaesthesia PG students participated in this study. The results of the survey were based on student's opinion of effectiveness of PBL with CBD suggested modifications. 28% accepted that they never formulate the learning objectives before the case discussions. 68% agreed that the teaching materials/references or/resources were never shared among the students before the case discussion. 70% of the students agreed that content of the cased based discussion was distributed but it never contained the direction of PBL. 87.5% participants accepted the fact that in their CBD only real patients were incorporated.

Conclusion: The majority of the students, in spite of their poor knowledge in understanding PBL such as the formulation of objectives, facilitation skills, and communication on the direction of PBL. Students expressed interest to learn case based discussions.

Key words

Problem-based learning (PBL), Case-based discussions (CBD), PG Teaching, Anesthesia.

Introduction

Medicine is a science, as well as an art and repeated exposures with an enhanced experience, will help improve skills and confidence [1]. The teaching curriculum in anesthesia usually involves lecture-based traditional teaching and manikin simulations. The traditional theory based approach acts a very passive role in knowledge deliverance and limits the development of imagination and reasoning skills [2]. Whereas Simulation-based learning is considered the ideal in anesthesia, it can be the answer to developing health professionals' knowledge, skills, and attitudes while protecting patients from unnecessary risks like ethical tensions and resolve practical dilemmas. However, this method is associated with a drawback like a cost, need for infrastructure, qualified technicians, and facility [3]. Team-work skills and interpersonal communication techniques are essential components of such training and exercise [4-7]. Problem-based learning (PBL) is defined as the active process of learning, motivated by a clinical problem, which may come across in day to day practice and readily accepted by the students [8]. PBL not only improves problem solving but also integrates the psychosocial and ethical aspects of medicine [9-10]. Case based discussions (CBD) is one are the extensively practiced PBL methods of postgraduate teaching in anesthesia [11]. To this reason, we evaluated effectiveness of problem-based learning methodology in anesthesia postgraduate teaching in a tertiary care teaching hospital.

Material and methods

This cross-sectional questionnaire-based study was done during 2012-2016 in all postgraduate students in the department of Anesthesia, Narayana Medical College; Nellore. IEC had permitted the study. The survey contained six questions, particularly intended to obtain the PG students view on effectiveness of PBL in CBD, which was adopted from the Melveetil S, et al. study and Barrow's rating of meeting the educational objectives [12, 13]. All the students were given the questionnaire and response was recorded in the form of yes/no. The questionnaire was collected anonymously and entered in Microsoft Excel software for calculating descriptive statistics such as mean, standard deviation (SD) and percentages.

Results

A total of 32 anaesthesia PG students participated in this study. The results of the survey were based on student's opinion of effectiveness of PBL with CBD suggested modifications. 28% accepted that they never formulate the learning objectives before the case discussions. 68% agreed that the teaching materials/references or/resources were never shared among the students before the case discussion. Communication on the content and direction of PBL was an important aspect as it helps in the structuring of knowledge and facilitating extraction and understanding of information from various resources. This enhanced the learning process as well as clinical performance. 70% of the students agreed that content of the cased based discussion was distributed but it never contained the direction of PBL. 87.5% participants accepted the fact that in their CBD only real patients were incorporated. (**Table – 1**)

Discussion

Even though anesthesia postgraduate teaching was mainly case-based discussion, it needs to

evaluate in depth [11]. This method assists in formulation of objectives, skills, communication on content and direction of PBL [14]. Majority students were for increased academic activity time. Very few students responded that the communication regarding the content and direction of PBL has never been attempted. The majority of the students were for increased academic activity time including weekly academic half day and availability of advanced equipment. Our study was also supported by Carrero, et al. study [15] regarding application of PBL in pre-anesthetic assessment and compared its effectiveness with the traditional lecture-based method by using an objective knowledge assessment.

Table – 1: Responses to survey questionnaire.	
1. Whether the students formulate learning objectives before the problem based learning.	28% (9/32)
2. Whether the teaching materials/ resources is shared amongst the students prior to the case discussion.	68.7% (22/32)
3. Is the content of PBL is distributed to all PG students and facilitators in advance	46.8% (15/32)
4. Is there prior communication on to the "Direction of PBL" to all students and facilitators.	28% (9/32)
5. Are real patients presented at the time of case presentation?	87.5% (28/32)
6. Does the questions and issues that are not answered within the small group forms the basis for further learning and discussion outside the group.	72% (24/32)

Conclusion

In our study, we concluded that majority of the students, in spite of their poor knowledge in understanding PBL such as the formulation of objectives, facilitation skills, and communication on the direction of PBL. Students expressed desire to learn for open interactive sessions and regular feedback to assess the effectiveness of teaching in anesthesia curriculum.

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