Short communication

# Opinions of an Iranian nursing faculty on barriers to implementing problem-based learning

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آراء الهيئة التدريسية في كلية تمريض إيرانية حول عوائق تنفيذ التعلُّم القائم على حل المشكلات

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الخلاصة: قام الباحثون بدراسة آراء 53 مدرِّساً في كلية التمريض بجامعة تبريز للعلوم الطبية حـول عوائـق تنفيـذ التعلُّم القائم على حل المشكلات، مستخدِمِينَ استبياناً من 13 بنداً يشتمل على أسئلة حول عدد واستعداد الطَّلَبـة، والـمدرِّسين، والحيِّز التعليمي، ومحتوى المقرر؛ فوجدوا أن 95٪ مـمَّن أجـابوا عـن الاستبيان يعتقـدون أن العقبـة الأساسية تـتمثَّل في افتقار الطَّلَبة إلى المعارف والمهارات اللازمة حول العمل الجماعي والتفاعل المتبادَل؛ كمـا رأى 94٪ أن تبديل دور المدرِّس إلى مُيَسِّر لا يحد من حماسهم فقط، ولكنـه قـد يـصبح عائقـاً. ورأت الأغلبيـة (98٪) ضرورة أخذ عدد من العوائق بعَيْن الاعتبار، بما فيها تكلفة تنفيذ وإدامة نظام التعلُّم القائم على حـل المـشكلات؛ وزيادة عدد الطَّلبة؛ وقلة عدد المدرِّسين الأكفاء.

ABSTRACT We investigated the opinions of all 53 lecturers in the nursing faculty of Tabriz University of Medical Sciences about barriers to implementation of problem-based learning (PBL). A 13-item questionnaire was used which included questions on number and preparedness of students and lecturers, educational space and course content. We found that 95% of the respondents believed that the most important barrier was the students' lack of knowledge and skills in group work and active interaction; 94% also believed that the change in their role from lecturer to facilitator would not reduce their motivation but it could be a potential barrier. The majority (98%) indicated that the cost of implementation and maintenance of PBL, too many students and a shortage of lecturers competent in PBL were among the barriers that needed to be considered.

L'avis d'une faculté de soins infirmiers iranienne sur les obstacles à la mise en œuvre de l'apprentissage par problèmes
RÉSUMÉ Nous avons sondé l'opinion de l'ensemble des 53 chargés d'enseignement de la faculté des soins infirmiers de l'Université des Sciences médicales de Tabriz sur les obstacles que rencontre la mise en oeuvre de la méthode d'apprentissage dite problem-based learning (PBL), ou approche par problèmes (APP). Pour ce faire, nous avons utilisé un questionnaire en 13 points visant à déterminer le nombre et l'état de préparation des étudiants et des chargés d'enseignement, l'espace pédagogique et le contenu de l'enseignement. Il nous est apparu que 95 % des personnes interrogées estiment que l'obstacle primordial réside dans la carence des connaissances des étudiants et leurs difficultés d'adaptation aux méthodes de travail de groupe et d'interaction active. En outre, 94 % pensent que leur mutation du statut de chargé d'enseignement au rôle d'animateur-formateur ne devrait pas entamer leur motivation, mais qu'elle pourrait éventuellement être perçue comme un obstacle. La majorité (98 %) souligne que le coût de la mise en application de l'APP comme de son maintien, l'effectif trop important des étudiants et la pénurie d'enseignants APP sont autant d'obstacles qu'il convient de ne pas négliger.

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## Introduction

The deficiencies perceived in traditional methods of teaching and learning have led to moves to develop and implement other more effective methods appropriate to a given situation [1].

In the medical/paramedical educational setting, traditional clinical education has a number of shortcomings. Therefore, specialists in educational planning have been developing and advocating more practical, effective and efficient accessible teaching and learning methods. One such method is problem-based learning (PBL), which is more active and participatory in nature [2,3].

PBL is now generally believed to be an effective educational method, which can have a profound effect on enhancing students' competency in practical and theoretical skills. PBL has already been introduced and implemented in many training programmes, such as architecture, law, engineering, medicine and nursing [4].

As the situation in different countries and educational settings differs with regards to educational needs and the characteristics of the learners and instructors, it is necessary to identify the exact barriers to successful implementation of PBL and how these can be overcome in order to design appropriate and well conceived interventions to implement PBL more successfully.

At Tabriz University of Medical Sciences, nursing is taught through a variety of methods such as lectures, practical work and fieldwork, and hospital internship; PBL is not currently used. In this study we aimed to explore barriers to introducing PBL in the nursing faculty by assessing the attitudes of members of the faculty at the university to implementation of PBL.

## Methods

The study was conducted during 2002–03. The subjects participating in the study included all 53 members of the Faculty of Nursing who were teaching at the undergraduate level at the university during 2002–03 and who held a Master's degree in Nursing and related fields.

A questionnaire with 13 items was designed by the researchers, based on the information available in the literature and on consultation with faculty members (professors, lecturers, managers). It was pilot tested and content validity was assessed by 16 members of other faculties. Test–retest was carried out at a 3-month interval (Pearson $r = 0.081$). Questions were in a yes/no format, and included questions about course content, teaching rooms, the number of faculty members and students and their characteristics. All 53 questionnaires were returned (100% response rate) and were complete.

## Results

Of the participants, 80% were female. The age ranges of the female and male participants were 28–52 years and 30–58 years respectively.

The questionnaire and the participants' responses are shown in Table 1. The majority (95%) of the respondents thought that improving the skills of students through group work and active interaction was an important issue. Revising the content of courses and obtaining the commitment of the top management were considered to be important by 90% and 80% of the participants respectively. The majority of the participants (98%) believed that reducing

Table 1 Opinions of the 53 nursing faculty members about barriers to implementation of problem-based learning (PBL)

| Possible barriers: | Response (%) | |
| --- | --- | --- |
| | Yes | No |
| Students' lack of knowledge and skills in group work | 95 | 5 |
| Changing the role of lecturers from just lecturing to facilitator | 94 | 6 |
| Changing the role of lecturers from just lecturing to facilitator may reduce their motivation | 11 | 89 |
| Cost of implementation and maintenance | 98 | 2 |
| Shortage of lecturers competent in PBL | 98 | 2 |
| Admitting too many students | 98 | 2 |
| Obtaining the commitment of top management | 80 | 20 |
| Changing the present course content (syllabus) to fit to PBL | 90 | 10 |
| If students do not attend a prior workshop on the principles of PBL | 85 | 15 |
| If lecturers do not attend a prior workshop on the principles of PBL | 88 | 12 |
| Change of traditional educational spaces(classrooms, etc.) | 8 | 92 |
| Lack of students' competency in coping with active interaction in educational settings | 95 | 5 |
| Lack of lecturers' knowledge of how to evaluate students' work | 98 | 2 |

the number of students admitted to the Faculty of Nursing and providing training for the faculty to enhance their competency and skills in PBL are essential to the successful implementation PBL. They also thought the high initial cost of implementation and maintenance of PBL was an important issue and needed to be seriously considered. The overall analysis of the data indicates that female participants answered "yes" to questions more often than did male participants.

## Discussion

The findings of this study indicate that the great majority of the lecturers believed that although PBL is an effective method for equipping students with practical skills, their students currently lacked competency in group work and in handling active interaction. These were serious barriers to the successful implementation of PBL. In this regard it has been concluded that students' familiarity with group work skills could improve the learning process in PBL [5,6].

While 94% of participants indicated that they themselves were not worried about a reduction in motivation of lecturers due to the change in their roles from lecturer to facilitator in PBL, they did consider it a potential barrier to PBL. In a similar study about the motivation of students in PBL, it was reported that students could be anxious or even angry about a new PBL approach [7]; 90% of our respondents believed that changing the current syllabus to a PBL-type could create serious problems. This finding was consistent with the findings of another study conducted by Yosefee, Jafari and Zolfegharee [8]. A majority of the participants thought that prior participation of students in educational workshops on

the principles of PBL was a necessity to increase the students' readiness and acceptance of PBL. Albanese and Mitchell in their study also concluded that the participation of students in preliminary PBL classes improves their attitudes [*6*]. Woods believes that changes to the curriculum introducing PBL can result in a sense of powerlessness, fear and anger, but the difficult stages can be overcome if students' awareness can be improved [*9*]. Vernon citing Kong [*10*] and Jones citing Gallagher [*11*] reported that PBL is an effective method in equipping students with practical skills and competence, but they failed to consider the high cost of implementing and running PBL, the lack of staff with sufficient skills and experience in PBL, and the large numbers of enrolled students as barriers. These, on the other hand, were a concern of the majority of our participants in our Iranian setting. With regard to the issue of the cost of PBL, our findings are consistent with those of Woods who reported that cost is a shock for both staff and students although it has been found that the greatest part of the cost is due to adequate preparation of the staff and students [*7,9*]. Lack of commitment of managers was another issue that participants thought could hinder the successful implementation of PBL and they believed that their support was essential to introducing PBL.

From the response of our participants, we conclude that capacity building and creating a supportive environment are considered the most important prerequisites to PBL implementation.

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