International Journal of Research in Medical Sciences
Dhumale S. Int J Res Med Sci. 2020 Jul;8(7):2448-2451
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20202877

Original Research Article

Physiotherapy student's perception of problem based learning

Supriya Dhumale*

Department of Electrotherapy and Elctrodiagnosis, K. J. Somaiya College of Physiotherapy, Mumbai, Maharashtra, India

Received: 23 April 2020
Accepted: 02 June 2020

***Correspondence:**
Dr. Supriya Dhumale,
E-mail: supriyadhumale@hotmail.com

ABSTRACT

Background: Problem based learning ensures that students are actively engaged in their learning- they set their own objectives and they reinforce what they have learned through discussion with their colleagues. This approach is known to promote deep learning, in contrast to much of the superficial learning happens in traditional methods. To support their learning through engaging them in learning activities and providing feedback. Student's ability to perform in a professional context, to recognize their need to acquire new knowledge and skills and to view learning holistically. Objective of the study was to assess the third year physiotherapy students' perception of problem based learning sessions in musculoskeletal condition.
Methods: The study was conducted on 22 students of III-year physiotherapy graduate course. Sequential arrangement of PBL sessions was implemented by triple jump assessment on osteoarthritis of knee. Post project feedback questionnaire from students obtained from self-assessment, peer assessment. The responses obtained were analyzed.
Results: All the student strongly agreed that The PBL scenarios motivated them to use additional learning resources, The PBL scenarios stimulated their interest in musculoskeletal. The students also agreed that the content of the PBL scenarios fitted their level of knowledge; The PBL scenarios effectively illustrated medical concepts. All the students totally agreed that PBL sessions appeared able to assess their own strengths and weaknesses within PBL, accepted and responded to criticism gracefully. Their peers gave input which was focused and relevant to the case, they were able to communicate well with each other. Students agreed that everyone among group completed tasks on time, they were actively participated in session, they shared new relevant information with group hence they felt their peers were responsible and respected.
Conclusions: Students felt that the cases effectively illustrated medical concepts and fitted and reinforced the student musculoskeletal knowledge. They were convinced that scenarios motivated them to use additional resources and stimulated their interest and they enjoyed the process.

Keywords: Osteoarthritis, Problem based learning, Physiotherapy students, Peer assessment, Self-assessment

INTRODUCTION

Problem Based learning (PBL) is an approach to learning revolving around a problem. Its learning occurs through understanding or solving the problem.

It is based on two postulates

- Problem solving skills are more important than memory skills,
- Learning through problem solving is more effective than memory based learning.[1]

Problem Based Learning is student-centered and either represents the core method of learning or supplements didactic teaching.

The initiating problem stimulates students to explore basic scientific and clinical mechanism and frequently social, psychological, ethical or professional issues. Knowledge is integrated and applied.[2]

The problem stimulates students to reason, think critically and weigh evidence; they seek out and share relevant information. Groups do not need prior knowledge to generate lively ideas as they identify areas for further collective and personal learning. Each student brings individual experience, thus making a distinctive contribution.[1]

Why Problem based learning (PBL)?

In PBL focus is on active learning, the information is gathered around problem which is situation based. The learning takes place in various sessions, students tend to remember it well since they are actively participating. Another important thing in PBL is that students and faculty plays various roles like tutor, advisor, group leader and scribe, leading them to work as team. In turn which leads to improve their bonding and every one contributes equally to learn.[3]

Knowles believes that the most important concept in adult education is the self-directed concept. Andragogy is based on the insight that the deepest need an adult has is to be treated as an adult, as a self-directing person, and to be treated with respect. Andragogy is student centered and problem centered.[4]

This is the focus for the student's learning and drives the learning activities on a 'need to know' basis. PBL has made a major contribution to medical education, but there has been a lack of clarity or a conceptual fog surrounding what is meant by the term and how it is implemented in practice. The underpinning educational principles are:

- Students are presented with examples from clinical practice, and then work out the principles or rules from the basic and clinical sciences that allow them to understand and interpret the problem.
- Students engage actively with learning, collaborating with their colleagues in a small group. (Activity is included in the FAIR model.)
- Students learn by self-study thus ensuring they understand the subject matter. (The Individual element in the FAIR model.) Building the learning around clinical problems and presentation.[5]

Purpose of the study

Good learning outcomes are achieved by active engagement with the learning process. The realization that the human mind is an active participant in the process of learning and is not just passive vessel waiting to be filled by a teachers word has caused a major shift in teaching methods in recent years. This method ensures that students are actively engaged in their learning- they set their own objectives and they reinforce what they have learned through discussion with their colleagues. This approach is known to promote deep learning, in contrast to much of the superficial learning.

Owing to the physiotherapy curriculum design which is mostly based on the didactic and laboratory lectures, there is limited scope for active participation and interaction with students for the teachers.

Objective

Hence, this study was aimed to introduce PBL approach to upgrade them to active learners. To assess the third year physiotherapy students' perception of problem based learning sessions in musculoskeletal condition. The primary purpose of evaluation (formative-at the end of sessions) is to determine how much and how well students have learned, to serve feedback to students and teachers.[6]

METHODS

Inclusion criteria

- Male and Female students
- Students studying at K. J. Somaiya college of Physiotherapy in III-year physiotherapy graduate course.

Exclusion criteria

- Students studying at I, II and IV year of physiotherapy graduate course.
- Students studying at master's program.

The study was conducted at K. J. Somaiya College of physiotherapy over a period of three months (November 2008-January 2009). Twenty-two students of III-year Physiotherapy graduate course participated in the study. Osteoarthritis of Knee joint, condition of musculoskeletal system was selected for the study.

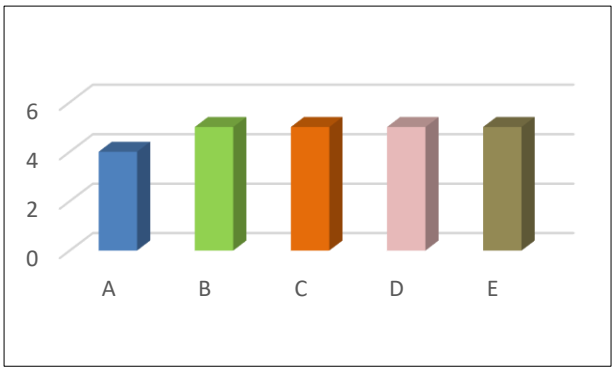
Sequential arrangement of PBL sessions was followed for topic and PBL implemented by Triple Jump Assessment.[7] One student was assigned group leader, one scribe and, role of faculty was a facilitator. Students' responses were obtained from Self-assessment and Peer assessment instrument using 5 point Likert scale were assessed at the end of the study.[8] Overall mean was calculated.

RESULTS

All the student strongly agreed that The PBL scenarios motivated them to use additional learning resources, The PBL scenarios stimulated their interest in musculoskeletal system. The students also agreed that the content of the PBL scenarios fitted their level of knowledge, The PBL scenarios effectively illustrated medical concepts (Figure 1).

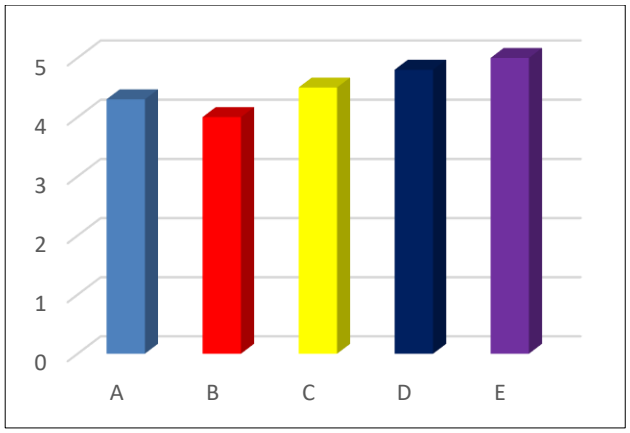
All the students totally agreed that PBL sessions appeared able to assess their own strengths and weaknesses within PBL, accepted and responded to criticism gracefully (Figure 1). Their peers gave input which was focused and

relevant to the case, they were able to communicate well with each other (Figure 2).



A. The content of the PBL scenarios fitted (the students/my) level of knowledge.
B. The PBL scenarios effectively illustrated medical concepts.
C. The PBL scenarios motivated (students/me) to use additional learning resources.
D. The PBL scenarios stimulated (the students/my) interest in musculoskeletal
E. The PBL scenarios helped to reinforce (students/my) musculoskeletal knowledge.

Figure 1: Self-assessment.



A- Responsibility and Respect, B- information processing, C- Communication,
D- Critical Analysis, E- Self- awareness.

Figure 2: Peer assessment instrument (17 item draft).

Students agreed that everyone among group completed tasks on time, they were actively participated in session, they shared new relevant with group hence they felt their peers were responsible and respected (Figure 2).

DISCUSSION

Among the study group members, the student's application of knowledge base has improved, which has encouraged them to do self directed learning and looks forward to do a team work. PBL study group has also improved their attitude during sessions and thus professionalism. Students started showing respect and responsibility towards their peer group. Overall feedback suggested that it was successful attempt to exploit the constructive, self-directed, collaborative and contextual characteristics of PBL.

PBL type methodology can be successfully used with larger groups of students to promote knowledge integration across conventional subject boundaries. The key to success lies with challenging and well situated clinically relevant cases that integrate the scientific and clinical aspects during PBL process.

It is also observed that challenging and clinically relevant problems allow students to follow their own learning outcomes whilst still fulfilling objective of integration.

An effective problem based learning group is cohesive, motivated, mutually supportive and actively engaged in learning. The group understands and energetically purses its task.[9] Adult learning is a continuous process of evaluating experiences.[10] PBL is effective in stimulating adult learning and transformative learning.

Student-centered learning prepares the students to take responsibility for their continuing learning after completion of undergraduate and postgraduate studies. Student-centered learning is more effective and more motivating for students. Student-centered learning is a system of learning that has the student at its heart. It has these elements;

- Students take responsibility for their own learning.
- Learning is personalized to the needs of the individual students.
- There is a shift in the power relationship from the teacher to the student goal setting by the learners, which energizes them and guides their actions.
- Monitoring and evaluating their own learning.
- Adjusting their learning strategy as appropriate.

CONCLUSION

The study brings new information for developing health care education and its curricula. Learning to learn a new way of learning is an essential step in students' learning to become professionals, something that is important to notice in their curricula and which provides the support needed for learning skills.

ACKNOWLEDGEMENTS

Authors would like to thank all the physiotherapy students who participated in this study. Mrs Veena Krishanand, Ex-Principal, K. J. Somaiya College of Physiotherapy for support and opportunity to conduct a study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Bhuiyan P, Supe A, Rege N. In: Ramnarayan K. Problem Based Learning, The art of teaching medical students. 2nd ed. Elsevier; 2002:315.
2. Dent J, Harden R, Hunt D. In: Sefton A. Problem based leaning. A practical guide for medical teachers. 5th ed. Elsevier; 2017:158.
3. Bhuiyan P, Supe A, Rege N. In: Ramnarayan K. Problem Based Learning, The art of teaching medical students. 2nd ed. Elsevier; 2002:315-320.
4. Sachdev P. Principles of Adult Learning the art of teaching medical students. 2nd ed. 2002:43.
5. Harden R, Laidlaw J. Essential Skills for Medical Teacher. 2nd ed. Elsevier; 2016:118.
6. Sethuraman KR. Teaching-learning methods: Variety, scope and choice. In: Ananthakrishnan N, Sethuraman KR, Kumar S (eds). Medical education: Principles and practice. Puducherry, India:National Teacher Training Centre, JIPMER; 1995:35-54.
7. Tiernan MK, Leahy M, Walsh I, Sloane P, Smith M. The triple jump assessment in PBL: an evaluative method used in the appraisal of both knowledge acquisition and problem solving skills. Case studies of good practice in assessment of student learning in higher education. University of Dublin: 2007(1).
8. Papinczak T, Young L, Groves M, Haynes M. An analysis of peer, self, and tutor assessment in problem-based learning tutorials. Med Teacher. 2007 Jan 1;29(5):e122-32.
9. Dent J, Harden R, Hunt D. In: Sefton A. Problem based leaning. A practical guide for medical teachers. 5th ed. Elsevier; 2017:160.
10. Sethuraman KR. Adult learning principle. In: Srinivasa DR, Ananthakrishnan N, Sethuraman KR, Kumar S, editors. Medical Education Principles and Practice. Pondicherry: National Teacher Training Centre, JIPMER; 1995:37.

Cite this article as: Dhumale S. Physiotherapy student's perception of problem based learning. Int J Res Med Sci 2020;8:2448-51.