



Problem based learning in the clinical setting – A systematic review

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KEYWORDS

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Summary Problem based learning (PBL) is widely utilised as a curricula modality within the health professions and extensive literature exists to support its application. Recently nurse educators have embarked on the PBL journey as a method of contextualizing theory into practice in the classroom and clinical setting. The University of Queensland, in partnership with key health care providers, introduced an innovative undergraduate nursing curriculum in 2004. The curriculum incorporates problem based learning, clinical skills sessions, lectures and clinical practice as part of an intense weekly program from first year onwards. The program facilitates integration of evidence based theoretical and clinical knowledge driven by the PBL philosophy.

However, in reality is PBL utilised by clinicians as a method of clinical teaching in undergraduate health professional programs? A systematic review of the literature was undertaken to answer this question revealing a paucity of evidence supporting or confirming the application of PBL in the clinical setting. The findings of this review highlight the current gaps in the PBL literature, supporting further research into the role of PBL as a teaching strategy for undergraduate nurses in the clinical practice setting.

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Introduction

Problem based learning (PBL) was first introduced to the health professions in the seventies as a cur-

ricula modality at McMaster University and is supported by an extensive body of literature (Albanese, 1993; Foley et al., 1997; Lohfeld et al., 2005; Maudsley, 1999; Vernon and Blake, 1993). PBL refers to a method of teaching that is student centered and encourages the development of critical reasoning skills. There have been numerous interpretations of PBL described in the literature (Foley

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et al., 1997). For the purpose of this review the taxonomy of PBL described by Barrows (1989) features the following four objectives as integral to PBL in medical education:

- The PBL teaching method structures knowledge in a clinical context, integrating theory from science.
- A clinical reasoning process develops problem solving skills including hypothesis generation, questioning, analysis, problem synthesis and decision making.
- Students are self-directed in searching for solutions to prove or disprove the hypothesis, and autonomously identify their own learning needs and sources of information.
- PBL should motivate the student to learn.

Recently nurse educators have embarked on the PBL journey as a method of contextualizing theory into practice in the classroom and clinical setting. The University of Queensland, Australia, in partnership with key health care providers developed and introduced an innovative undergraduate nursing curriculum in 2004. The pervading goal of this program is to develop graduate nurse who are work ready critical thinkers, able to base their practice on evidence within a PBL framework and respond effectively to the challenges of a rapidly changing health sector (Turner et al., 2006). The curriculum incorporates problem based learning, clinical skills sessions, lectures and clinical practice as part of an intense weekly program from the first year onwards. The program facilitates integration of evidence based theoretical and clinical knowledge driven by the problem based learning philosophy. Students are presented with a “real life” practice problem on a weekly basis and follow a fictitious patient through the entire spectrum of illness and nursing management from pre-hospital admission to community follow-up. Clinical skills training and formal lectures complement the PBL sessions and students translate these experiences into practice during weekly clinical practice shifts in the acute hospital and community settings. PBL in the classroom is facilitated by Clinical Lecturers with strong clinical backgrounds and a commitment to evidence based practice. In the hospital or community setting students are mentored by experienced nurses in the practice of clinical skills and preparation for the role of registered nurse. Ward (unit) clinicians and students are supported in this experience by the Clinical Lecturers, with the focus of linking theory to practice. PBL is pivotal in facilitating this link and clinicians are encouraged to adopt a PBL approach in teaching students.

PBL provides a practical clinical teaching methodology to facilitate the application of theory to practice and guide students in the acquisition of critical reasoning and practical skills. However, in reality is PBL utilised by clinicians as a method of clinical teaching in health professional undergraduate programs? This review seeks to answer the following questions:

1. What is the clinician’s understanding of the term PBL?
2. Is PBL utilised or applied as a strategy for teaching in the clinical setting?
3. What facilitates or impedes the implementation of PBL in the clinical setting?

This systematic review of the literature describes the phenomena of PBL in the clinical setting. The paper includes a description of the methods applied to retrieve relevant literature, review of the available studies, discussion of the findings and recommendations for further research.

Method

Studies that were included in the systematic review adhered to the following inclusion criteria:

- (1) Problem based learning as a teaching method – all health professions.
- (2) The study focused on the clinical setting (acute, non-acute, community). This did not include studies relying on findings from simulated or laboratory settings.
- (3) The study participants were students and/or clinicians – all health professions.
- (4) The study was available in English.
- (5) The study was qualitative or quantitative in nature.

A search for published and unpublished studies was conducted. Initially a broad search was undertaken including Cinahl, Pre-Cinahl, Medline and Health Source, Psycinfo, ERIC and several other professional databases and networks. This search was not limited in date, given the extended history of PBL, and focused on the text words of clini*, “problem based learning” and student* or undergraduate resulting in the retrieval of 1528 articles. A scan of these results assisted with further refining the search terms and strategies. In consultation with an experienced librarian and based on the initial scan results, search strategies were designed and applied to Cinahl and Medline databases as described in

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