

SHORT REPORT

A collaborative approach to engaging undergraduate students in learning and developing evidence-based practice

N. Lee & J. Jauncey-Cooke

Abstract

Background: Students often have difficulty engaging with evidenced-based practice (EBP) courses that are largely theoretical and lack clinical relevance. This may result in graduates lacking vital skills to critique practice and participate in quality improvement.

Approach: This paper describes the development and implementation of a collaborative academic and healthcare industry-based course that linked theoretical aspects of EBP. Students undertook a quality improvement project during clinical practice experience. Course assessments were designed to provide feedback on the progression of projects, the integration of theoretical and practical aspects of EBP and dissemination of findings.

Conclusions: The course required substantial collaboration between the university and industry partners to identify clinically relevant projects and coordinate academic and clinical mentorship to support the students. The course demonstrated a significant level of clinical and academic partnership that resulted in relevant clinical quality improvements and increased student engagement with learning about, producing and implementing EBP.

Keywords: evidence-based practice; quality improvement; quality assurance; interprofessional

Introduction

Evidenced-based practice (EBP), quality improvement (QI) and research have been modelled as the three individual components of the “continuum of clinical scholarship” (Carter et al., 2017, p. 268). This conceptual representation illustrates the interaction between EBP, QI and research in the development and implementation of best practices while recognising the differences between the three. Research is a methodologically driven process that generates, refines or validates knowledge (Shirey et al., 2011), whereas

School of Nursing, Midwifery and Social Work, University of Queensland, St Lucia, Queensland, Australia

Correspondence: Dr Nigel Lee nigel.lee@uq.edu.au

EBP can be defined as a client-centred collaborative process of problem solving and clinical reasoning that incorporates relevant evidence, clinical expertise and patient context to arrive at defensible decisions on healthcare (Murphy et al., 2019; Shirey et al., 2011). Within a healthcare setting, QI represents a data-driven approach to assessing and refining processes and care delivery with the aim of improving health outcomes and efficiency (Shirey et al., 2011). All three require a rigorous systematic approach with a common first step of establishing what is already known or recommended through literature review (Shirey et al., 2011). The contribution and interaction of EBP, QI and research to nursing and midwifery practice is highlighted by Hedges's (2006) illustration of the three-legged stool. In this analogy, clinical practice is the seat that relies upon the presence of all three legs to remain stable.

It is an appropriate expectation that graduate midwives and nurses have a functional level of literacy in EBP, QI and research processes (Kyriakoulis et al., 2016), however teaching such concepts presents challenges, with undergraduate students reporting difficulty engaging with a topic that appears largely theoretical and not easily related to practice (Aglen, 2016). Effective partnerships between clinical areas and educators would assist in creating a more effective pedagogical approach (Armstrong et al., 2017). Significant collaboration between university and industry partners would be needed to successfully provide both the theoretical instruction and practical experience of EBP to students.

This paper describes the development, implementation and evaluation of an innovative course for final-year midwifery and nursing students that required them to complete a QI project within their placement setting. The practical challenges and clinical and educational benefits of introducing a program that required partnering between the university and 80 placement sites at over 20 metropolitan and rural hospitals and services are explored.

Innovation

The course was designed to be undertaken in one semester of the final year of a revised curriculum for undergraduate midwifery, nursing and dual degree (Bachelor of Nursing and Bachelor of Midwifery) students. In this final year, students undertake up to 320 hours of clinical placement per semester (of a two semester academic year), spending up to four shifts per week in the allocated clinical area. Most students stay in one clinical area throughout the semester.

The course focused on QI projects, as they share a number of processes with EBP and research with the added advantage of being locally situated and offering clinically relevant discrete topics that could be investigated over the 13-week course timeframe. The objectives of the course were, firstly, to provide students with theoretical knowledge of EBP, research and QI, including how each of these three approaches undertakes data acquisition, analysis and interpretation to influence practice. Secondly, students then applied this knowledge as they developed and undertook their QI project.

The theoretical components of the course were divided into five modules: introduction to EBP, research and QI; undertaking a literature review and developing a question; methodological approaches and data collection; data analysis and presentation; project completion and implementation. Each module was presented using blended learning consisting of online content supported with a lecture/workshop where students received practical instruction in activities such as literature searching, data analysis and presentation.

Throughout the semester, from March to June 2019, students undertook a QI project in their area of clinical placement. Importantly, the project was identified by the manager of the clinical area or service so the topic and outcomes would have local relevance. Examples of QI projects undertaken by the students include: compliance with guidelines for securing paediatric peripheral intravenous devices, compliance with the five moments of hand hygiene, compliance with escalation based on early warning tool scores, mapping the frequency of staff ingress and egress in the operating theatre during major orthopaedic surgery cases to assess risks around infection control, and auditing compliance with perinatal mental health referral pathways. The QI activities had to be compliant with state government patient privacy and data security legislation that omitted the use of any individual or identifiable patient data. The projects also needed to be suitable to be undertaken by a student within the semester timeframe. Students were provided with individual clinical mentorship from an appropriate staff member, also selected by the relevant manager, to guide them through the pragmatic issues of design, data collection and the QI process particular to each site.

Identifying the QI projects and nominating clinical mentors presented a number of challenges across a large and diverse group of industry partnerships. Clearly articulating the objectives of the course and potential mutual benefits and establishing clear lines of communication were key to the pre-commencement work required. In larger sites, this was facilitated by a central contact person (e.g., nurse/midwifery educator) who collaborated with a course coordinator to arrange projects and clinical mentors across the service. In smaller settings, such as rural placements, a course coordinator liaised with individual nurse/midwifery managers. Overall, the process required planning and communication with sites to start 3 months prior to the commencement of the course.

The students were further supported through allocation to a small tutorial/mentor group facilitated by a nursing or midwifery academic that met regularly throughout the semester. The tutorials used a semi-structured framework that linked the blended theoretical content and the progression of the projects in the placement areas. Meeting either face to face or online, these small group tutorials provided an opportunity for students to discuss immediate issues and challenges, with the group providing feedback and exploring issues and possible solutions.

The objectives of the assessments were to provide students with formative feedback on the progress of their projects and, at the conclusion of the course, demonstrate the integration

of their theoretical and practical learning into the completion of the QI project. The initial formative assessment was a written assignment comprising a literature review, construction of a project question or aim and development of a project plan. The final two assessments required students to present their project to two different audiences in differing formats: firstly, as an oral presentation to clinicians within their clinical or service placement area and, secondly, as a poster at a poster conference accompanied by a 5-minute oral synopsis assessed by a course lecturer. The poster conference was attended by student peers, academics and invited industry partners and leaders. The two presentation formats, one oral and the other largely visual, provided students with the experience of how the same information may be presented with different emphasis relative to the particular audience.

Evaluation

The initial iteration of the course was evaluated using the university's online course evaluation, where students have the opportunity to rate aspects of the course using a 5-point Likert scale (1 = *very poor* to 5 = *outstanding*) and provide an overall rating of the course. The students initially undertaking the course had transitioned into the new curriculum in their final year. Previously, students in the first semester of the final year had not been required to undertake any formal theoretical courses, so it was not unexpected that some students would react negatively to what they viewed as a workload not required of previous students for the same degree. This was reflected in the mid-semester course rating of 1.95/5. The end of semester evaluation saw significant improvement in the overall course rating (3.08/5) whilst indicating scope for improvement. In the open-text answers, the students commented positively on the increased sense of independence and autonomy resulting from undertaking the project. The students highlighted the greater degree of engagement with clinicians and increased involvement in the background activities that underpin clinical practice.

The positive aspects of the course reported by students were echoed in the anecdotal feedback provide by the industry partners, which indicated that greater student engagement with staff, improved student insight into the functioning of the work area and benefits for the unit from the completion of the project were the main advantages of the course. The students and partner feedback identified several key areas for review and improvement for both the university and industry contributions to the course. An early area of stress for the students and increased workload for the placement areas was the initial degree of consultation and support the students required to understand and begin to refine their topics and plan for the projects.

Further challenges involved identifying suitable clinical mentors, establishing lines of communication and managing issues such as students and clinical mentors working opposing shifts and extended periods of absence leaving students unexpectedly without mentor support. The clinical mentor role is the linchpin of the course; difficulties in

accessing and communicating with mentors was the main source of stress for some students and the main challenge identified by the nurse/midwifery managers. This is not an easy issue to resolve given the complexities of staffing, rostering and the impact of workloads on accessing emails and arranging meetings with students. It was recognised that when appointing clinical mentors, a motivation to engage with and support students was more important than previous experience in QI activities or process and topic expertise.

To address the issues identified through feedback from both students and industry partners, a number of strategies were developed and employed. More detail in terms of project descriptions, objectives, expectations and design considerations was sought from nurse/midwifery managers to provide students with greater clarity regarding the proposed projects. Site visits and information sessions were held in areas with a high volume of students at the beginning of the semester, and resources were developed (hard copies and online webinars), produced and disseminated to describe and support the role of the clinical mentor. The introductory lecture for students was modified to improve information regarding semester progression and expectations, in line with the feedback received. Summative online course evaluations for the second iteration increased 33% from a mean of 3.08 to 4.1.

Conclusion

Developing this course required a new level of cooperation between the university and the industry partners and resulted in benefits for the students and the practice areas while also identifying areas for modification. Students may often not be regarded as having sufficient knowledge to participate in ward-level EBP and QI activities (Cronje & Moch, 2010). This may result in an under-utilisation of the skills and knowledge that students may bring to the workplace (Ryan, 2016). However, an advantage of this approach to teaching foundational QI, EBP and research concepts through engaging with locally relevant QI projects was the impact on student confidence to participate in the “behind the scenes” functioning of the unit and act as an advocate for change. The empowerment of students through education, hands-on practice and support from more senior peers may assist in fostering a greater sense of assertiveness and advocacy for QI, EBP and research, traits that are essential in future midwifery and nursing practitioners and leaders.

What next?

The course continues to evolve in response to student and industry partner feedback and challenges placed on universities and healthcare providers from the COVID-19 pandemic. For example, a selection of projects aligned with local quality and key safety indicators will be available for students. This reduces the onus on nurse/midwifery managers to annually source individual projects (though this is still an option). Having projects that have a degree of commonality across clinical areas provides some portability for when

students are required to move placements in response to COVID-19 restrictions or have shorter consecutive placements in different clinical areas.

Acknowledgements

The authors gratefully acknowledge the contribution of the midwifery and nursing academic, leadership and clinical staff to the development and ongoing presentation of the course.

Conflicts of interest and funding

The authors declare no conflicts of interest, and no external funding was associated with this project.

References

- Aglen, B. (2016). Pedagogical strategies to teach bachelor students evidence-based practice: A systematic review. *Nurse Education Today*, 36, 255–263. <https://doi.org/10.1016/j.nedt.2015.08.025>
- Armstrong, L., Shepherd, A., & Harris, F. (2017). An evaluation of approaches used to teach quality improvement to pre-registration healthcare professionals: An integrative review. *International Journal of Nursing Studies*, 73, 70–84. <https://doi.org/10.1016/j.ijnurstu.2017.05.005>
- Carter, E. J., Mastro, K., Vose, C., Rivera, R., & Larson, E. L. (2017). Clarifying the conundrum: Evidence-based practice, quality improvement, or research? The clinical scholarship continuum. *JONA*, 47(5), 266–270. <https://doi.org/10.1097/nna.0000000000000477>
- Cronje, R. J., & Moch, S. D. (2010). Part III: Reenvisioning undergraduate nursing students as opinion leaders to diffuse evidence-based practice in clinical settings. *Journal of Professional Nursing*, 26(1), 23–28. <https://doi.org/10.1016/j.profnurs.2009.03.002>
- Hedges, C. (2006). Research, evidence-based practice, and quality improvement: The 3-legged stool. *AACN Advanced Critical Care*, 17(4), 457–459. <https://doi.org/10.4037/15597768-2006-4010>
- Kyriakoulis, K., Patelarou, A., Laliotis, A., Wan, A. C., Matalliotakis, M., Tsiou, C., & Patelarou, E. (2016). Educational strategies for teaching evidence-based practice to undergraduate health students: Systematic review. *Journal of Educational Evaluation for Health Professions*, 13, 34–34. <https://doi.org/10.3352/jeehp.2016.13.34>
- Murphy, B., Guisard, Y., Curtin, M., Biles, J., Thomas, C., & Parnell, T. (2019). Evidence-based practice: What do undergraduate health students think it means? *Focus on Health Professional Education*, 20(3), 12–29. <https://doi.org/10.11157/fohpe.v20i3.319>
- Ryan, E. J. (2016). Undergraduate nursing students' attitudes and use of research and evidence-based practice: An integrative literature review. *Journal of Clinical Nursing*, 25(11–12), 1548–1556. <https://doi.org/10.1111/jocn.13229>
- Shirey, M. R., Hauck, S. L., Embree, J. L., Kinner, T. J., Schaar, G. L., Phillips, L. A., Ashby, S. R., Swenty, C. F., & McCool, I. A. (2011). Showcasing differences between quality improvement, evidence-based practice, and research. *The Journal of Continuing Education in Nursing*, 42(2), 57–68. <https://doi.org/10.3928/00220124-20100701-01>