



Evidence-based practice and undergraduate nursing curriculum: Trends and perspectives

Non-Research Paper

Cristina Lavareda Baixinho¹, Óscar Ferreira², Marcelo Medeiros³, Ellen Synthia Fernandes de Oliveira⁴

¹Nursing School of Lisbon; Nursing Research, Innovation and Development Centre of Lisbon (CIDNUR), Lisbon; Center for Innovative Care and Health Technology (ciTechCare), Polytechnic of Leiria, Portugal; ²Nursing School of Lisbon; Nursing Research, Innovation and Development Centre of Lisbon, Portugal; ³Nursing School of the Federal University of Goiás, Brazil; ⁴Graduate Program in Collective Health at the Federal University of Goiás, Brazil

Corresponding author: C. L. Baixinho (crbaixinho@esel.pt)

ABSTRACT

Evidence-based practice is recognized as key to improving the quality of health care, increasing patient safety, controlling costs, and improving outcomes for people with healthcare and nursing needs. Despite its advantages, the use of evidence in healthcare settings is not yet a standard of healthcare in the world. How can students learn and develop skills to use evidence-based-practice (EBP) in current nursing curriculum and how can researchers work with students and clinical professionals to increase EBP? Changes in nursing education will require close collaboration with clinical contexts because learning about evidence takes place outside the classroom.

KEYWORDS

Evidence; Knowledge Translation; Learning; Nursing; Students

BACKGROUND

The evolution of health research has brought gains for the quality and safety of care provided to citizens, as well as improvement in indicators, such as morbidity, mortality rate and average life expectancy, and influence in health policies and professional education (Ferreira, Baixinho, Medeiros & Oliveira, 2021). Health professionals are concerned that their approach is both effective and feasible, and that evidence and clinical decision making are timely, appropriate, and meaningful to people and communities (Apóstolo, 2017).

Ensuring an evidence-based practice (EBP) throughout undergraduate nursing curriculum includes not only the quality of the research and its dissemination, but also the development of strategies to identify target audiences (such as clinicians, managers, policymakers, consumers, and others) and the design, implementation, and methods to organize and transfer knowledge that is understandable and usable in decision making (Apóstolo, 2017; Cardoso et

al., 2020). However, experts note that the adoption of EBP is not yet a standard of healthcare in the world (Melnik et al., 2014). They warn that there is a gap between the appearance of research findings, practice, and health policy (Oliver, Innvar, Lorenc, Woodman, & Thomas, 2014; Apóstolo, 2017; Cardoso et al., 2021; Zanchetta et al., 2021) and the time it takes for changes to be introduced at the clinic level.

On one hand, beliefs in the value of knowledge, the ability to implement best practices, the contexts that facilitate the implementation of evidence, and support are some of the factors that facilitate knowledge's use in decision making (Melnik, Gallagher-Ford, Long, & Fineout-Overholt, 2014; Baixinho, Presado, & Ribeiro, 2019). On the other hand, there are difficulties in using knowledge. For example, using linear and unidirectional models to passively take information from researchers to users leads to the delayed introduction of research findings into the clinic, which makes innovation in healthcare



delivery difficult. In fact, some results are already obsolete by the time they reach the clinic floor (Ferreira et al., 2019; Ferreira et al., 2021).

Nursing knowledge has patterns obtained by different methods, especially qualitative methods. Developments in this knowledge not only have the potential to introduce innovative technologies in care and to improve sensitive health outcomes, but also to allow person-centred care, individualizing interventions and integrating the preferences and expectations of both the patient and caregiver. However, to achieve this objective, research results must be accelerated in practice and in health policymaking. According to Apóstolo (2017) successful health services in the future will be those that invest in the constant search for the information needed to guide practices, develop clinical leaders, and establish and maintain a culture of improvement in daily practice.

Although EBP and knowledge transfer to the clinic is recently gaining scholarly attention, researchers face complex challenges, from designing studies to the use of their results, which do not allow for their research's adoption into praxis (Cardoso et al., 2020; Cardoso et al., 2021). When it comes to nursing students, 87 percent do not use research results in clinical practice, and they report that the non-use of the available evidence is related to insufficient knowledge about using research (Ertug & Önal, 2014).

It is undeniable that the increased complexity of clinical contexts, which has become evident with the current SARS-CoV-2 pandemic, requires that both health care professionals and clients have access to current and adequate knowledge to solve health-illness processes. But the pandemic has also made it clear that health professionals' level of scientific literacy may not be very high. For example, denialist health professionals have disseminated a lot of information through social and other media that was not supported by evidence, and many had negative attitudes toward scientifically informed responses to the pandemic.

EBP and research are clear challenges for health professionals, but also for academics charged with educating future health professionals who require skills in research and correctly using research results in clinical practice. Evidence-based practice has

benefits for improving health care and the sustainability of health systems. And like other skills it needs to be learned.

REFLECTIVE DISCUSSION

We aim to lead the reader to reflect on EBP and pedagogy based on a dialogue between the researchers' concerns, experience, and the literature on the subject. Our major motivation to conduct this reflection was the observation that EBP is a complex process that nursing students need to learn. Other authors support the need for such reflection by presenting several obstacles to the introduction of evidence, such as: heterogeneous results, methodological and ethical issues, scientific rigour, project execution capacity, difficulties in research funding, relevance and usefulness in the face of health needs and policies, effectiveness in communication, dissemination, and lack of a scientific culture of collaborative work for the development of products that introduce results in different contexts (Baixinho & Costa, 2019; Loura et al., 2022). The predominance of unidirectional models to introduce research results is also an issue of concern for student education because the delay in introducing results prevents students from observing the advantages of using evidence. This is a lost opportunity for undergraduate training.

Recent studies have reinforced that nurse are not well prepared to apply EBP (Horntvedt et al., 2018) and that nursing students do not recognize the importance of this approach and lack the knowledge and skills to use it (Patelarou, et al., 2020). This is a significant issue because health research has been very productive in recent years, but there are several gaps in the use of the recent and best evidence in clinical settings. Our research showed that students have doubts and difficulties in knowledge transfer to clinical contexts.

In this context, our reflection was guided by the following questions:

- a) *How can students developed skills to use EBP?*
- b) *How can researchers work with students and clinical professionals to increase the use of EBP?*

These reflections are by the authors, who are Portuguese and Brazilian researchers. They suggest



research in nursing has increased substantially, but most often with a delay in introducing the results into the clinic. Based on the reflections, several themes have been identified and will be addressed throughout the remainder of this paper.

Fostering a Culture of Undergraduate Research

Around the globe there is a growing interest in health research and the involvement of undergraduate and postgraduate students. Researchers recommend that future health professionals should be involved in research activities to nurture a research culture and spirit (Einarsen & Giske, 2019). The introduction of EBP has emerged in nursing curricula for the students' academic development and to deepen the curriculum's theoretical content (Mena-Tudela et al., 2018; Loura et al., 2022). EBP in the curriculum promotes a theoretical-practical integration, mainly during clinical teaching, so that it has an impact on improving care and facilitates the development of a new health professional with scientific skills at different levels who can guide their professional practice based on research results (Loura et al., 2022).

Given the importance of EBP to the profession, it becomes imperative to instill in students a sense of passion and enthusiasm for research and its everyday relevance to ensuring quality (Hurlbut & Elkins, 2018) and cost-effective health outcomes (Watson, Sahota, Taylor, Chen, & Lilford, 2018).

Need to develop scientific competency

The development of scientific competencies involves the acquisition and consolidation of a minimum set of attributes, knowledge, skills, and attitudes related to EBP that contributes to safer, higher-quality, and person-centred care (Keib et al., 2017, Loura et al., 2022). Clinical teaching is key for improving students' knowledge, attitudes, and skills in EBP. Learning about research and the use of scientific knowledge is greater when it is integrated into such teaching (Cardoso et al., 2020).

However, it is difficult to achieve these objectives in traditional pedagogy when a teacher prepares lessons, then explains and demonstrates to students (Loura et al., 2022), hoping that, in this way, students will be able to use research to produce safe clinical

outcomes. Nursing education should strengthen critical thinking skills and enhance students' skills in the areas of analytical thinking, problem solving, and clinical reasoning (Einarsen & Giske, 2019). Some authors advocate that the investment in EBP is not an investment in school furniture. The student must be an active participant in the research process to *experience* EBP at work (Cardoso et al., 2020; Ferreira et al., 2021).

Need to connect research to clinical context

This "teaching to the desks" without connecting to the clinical contexts can increase students' experience of a gap between theory and practice in clinical decision making (Ferreira et al., 2021). Therefore, some authors call for a paradigmatic break with this approach that leads to a void between the theoretical and practical worlds (Baixinho & Costa, 2019; Ferreira et al., 2021). To this end, it is necessary to promote reflection on the practices—the "ways of doing" and the consequences of the activity—using research-based knowledge for decision making (Baixinho, & Costa, 2019).

For some experts clinical teaching is key to improving students' knowledge, attitudes, and skills in terms of scientific evidence (Aglén, 2016; Mena-Tudela et al., 2018; Loura et al., 2022). Learning about EBP is most successful when it is integrated into clinical teaching, probably because students can experience the process and the impact on improving care in different practice settings (Ferreira et al., 2021).

Creating EBP learning opportunities during clinical teaching can contribute to students being able to critically evaluate scientific literature and use scientific knowledge in clinical decision making (Oh & Yang, 2019; Ommering, et al., 2019). Therefore, research during undergraduate study is emerging to help students develop the skills and competencies needed for a healthcare professional today (Long, Bischoff, & Aduddell, 2018; Zuchowski, Heyeres, & Tsey, 2020).

Barriers to student engagement in evidence base practice

Despite the numerous advantages already described and the consensus in the literature about



the importance of nursing students' involvement in research activities, we also found barriers to their involvement in EBP projects, such as the lack of knowledge and/or negative attitudes about research and students' involvement in it; difficulties in the communication, dissemination, and appropriation of results by professionals; and lack of institutional and economic support necessary to conduct research (Long, Bischoff, & Aduddell, 2018; Loura et al., 2022).

These difficulties are a challenge for any active articulation between academic institutions and clinics hoping to create opportunities for collaborative work that can benefit student development and simultaneously contribute to improved practices (AlThiga, Mohidin, Park, & Tekian, 2017; Cardoso et al., 2020; Cardoso et al., 2021; Ferreira et al., 2021). Researchers can play a crucial role in stimulating students' critical and reflective thinking by involving them in different research activities (Ferreira et al., 2021).

Nursing students' early exposure to different research activities can influence them as recent graduates to become drivers of change and help them incorporate evidence into their future clinical practice and be more proactive in the search for postgraduate training (Slattery et al., 2016; Ferreira et al., 2021). Undergraduate research experience provides greater professional development, facilitates the understanding of more complex situations in people's health/illness processes, allows the development of research skills, and prepares nurses for a broader scope of practice (Einarsen & Giske, 2019).

A concerted international movement to support EBP education for nurses, all around the world, will benefit the care of populations in low-, middle-, and high-income countries. International associations of nurse educators should identify pedagogical strategies and activities that enable the development of competencies central to this movement.

CONCLUSION

Teachers and researchers need to rethink nursing students' education models to promote learning and skills development that increase students' knowledge about EBP and allow them to be in contact with and participate in research projects, EBP, and knowledge transfer to the clinic. We believe that the scientific literacy of professionals and the development of a

culture of EBP in health institutions require a change in education and health policies with a direct impact on training.

REFERENCES

- Aglen, B. (2016). Pedagogical strategies to teach bachelor students evidence-based practice: a systematic review. *Nurse Education Today*, 36, 255-263.
- AlThiga, H., Mohidin, S., Park, Y.S., & Tekian, (2017). A. Preparing for practice: Nursing intern and faculty perceptions on clinical experiences. *Medical Teacher*, 39(sup1), S55-S62.
- Apóstolo, J. (2017). Síntese da evidência no contexto da translação da ciência. Coimbra, Portugal: Escola Superior de Enfermagem de Coimbra (ESEnfC).
- Baixinho, C.L., & Costa, A.P. (2019). From the hiatus in the theory - practice discourse to the clinic based on the uniqueness of knowledge. *Escola Anna Nery*, 15;23(3):e20190141.
- Baixinho, C. L., Presado, M. H., & Ribeiro, J. (2019). Qualitative research and the transformation of public health. *Ciência & Saúde Coletiva*, 24 (5),1583-1583.
- Cardoso, M., Baixinho, C.L., Ferreira, Ó., Nascimento, P., Pedrosa, R., & Gonçalves, P. (2020). Autopercepção dos estudantes sobre a participação em atividades extracurriculares de transferência de conhecimento: o exemplo da Transição Segura. *New Trends on Qualitative Research*, 2(2020), 588-601.
- Cardoso, M., Baixinho, C.L., Ferreira, Ó., Nascimento, P., Pedrosa, R., & Gonçalves, P. (2021). Aprender prática baseada na evidência pelo envolvimento em atividades de investigação – autopercepção dos estudantes. *Cogitare enfermagem*, 26, e79806.
- Einarsen, K.A., & Giske, T. (2019). Nursing students' longitudinal learning outcomes after participation in a research project in a hospital. *International Practice Development Journal*, 9(1), 4 pages.
- Ertug, N., & Önal, H. (2014). Undergraduate Nursing Students' Research Activities and Utilization: A Turkish Sample. *Aquichan*, 14(2), 251-260.
- Ferreira, Ó., Baixinho C.L., Medeiros M., & Oliveira E. (2021). Learning to Use Evidence in the Nursing Degree Course: Results of a Focus



- Group. *New Trends on Qualitative Research*, 8, 35-43.
- Ferreira, E. M., Lourenco, O. M., Costa, P. V., Pinto, S. C., Gomes, C., Oliveira, A. P., Ferreira, Ó., Baixinho, C. L. (2019). Active Life: a project for a safe hospital-community transition after arthroplasty. *Revista Brasileira de Enfermagem*, 72(1), 147-153.
- Hornrtvedt, M. T., Nordsteien, A., Fermann, T., & Severinsson, E. (2018). Strategies for teaching evidence-based practice in nursing education: a thematic literature review. *BMC medical education*, 18(1), 172.
- Hurlbut, J., & Elkins, M. (2018). Redesigning an Undergraduate Nursing Research Course Using Innovative Teaching Strategies. *SM Journal of Nursing*, 4(1), 1017.
- Keib, C. N., Cailor, S. M., Kiersma, M. E., & Chen, A. M. H. (2017). Changes in nursing students' perceptions of research and evidence-based practice after completing a research course. *Nurse Education Today*, 54, 37-43.
- Long, A., Bischoff, W. R., & Aduddell, K. (2018). Research Prescription for Undergraduate Students: Research Mentoring in a Small Liberal Arts University. *Journal of Professional Nursing*, 35(3), 170-3.
- Loura, D. S., Bernardes, R. A., Baixinho, C. L., Henriques, H. R., Félix, I. B., & Guerreiro, M. P. (2022). Nursing students' learning from involvement in research projects: an integrative literature review. *Revista Brasileira de Enfermagem*, 75(1), e20210053.
- Mena-Tudela, D., González-Chordá, V. M., Cervera-Gasch, A., Maciá-Soler, M. L., Orts-Cortés, M. I. (2018). Effectiveness of an Evidence-Based Practice educational intervention with second-year nursing students. *Revista Latino-Americana de Enfermagem*, 26, e3026.
- Melnyk, B., Gallagher-Ford, L., Long, L., & Fineout-Overholt, E. (2014). The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: proficiencies to improve healthcare quality, reliability, patient outcomes, and costs. *Worldviews on Evidence-Based Nursing*, 11(1), 5-15.
- Oh, E. G., & Yang, Y. L. (2019). Evidence-based nursing education for undergraduate students: A preliminary study. *Nurse Education Practice*, 38, 45-51.
- Oliver, K., Innvar, S., Lorenc, T., Woodman, J., & Thomas, J. (2014). A systematic review of barriers to and facilitators of the use of evidence by policymakers. *BMC Health Services Research*, 14, 2.
- Ommering, B. W. C., Diepen, M. V., van Blankenstein, F. M., Jong, P. G. M., & Dekker, F. W. (2019). Twelve tips to offer a short authentic and experiential individual research opportunity to a large group of undergraduate students. *Medical Teacher*, 42(10), 1128-1133.
- Patelarou, A. E., Mechili, E. A., Ruzafa-Martinez, M., Dolezel, J., Gotlib, J., Skela-Savič, B., Ramos-Morcillo, A. J., Finotto, S., Jarosova, D., Smodiš, M., Mecugni, D., Panczyk, M., & Patelarou, E. (2020). Educational Interventions for Teaching Evidence-Based Practice to Undergraduate Nursing Students: A Scoping Review. *International journal of environmental research and public health*, 17(17), 6351.
- Slattery, M. J., Logan, B. L., Mudge, B., Secore, K., von Reyn, L. J., & Maue, R. A. (2016). An Undergraduate Research Fellowship Program to Prepare Nursing Students for Future Workforce Roles. *Journal of Professional Nursing*, 32(6), 412-420.
- Watson, S. I., Sahota, H., Taylor, C. A., Chen, Y. F., & Lilford, R. J. (2018). Cost-effectiveness of health care service delivery interventions in low and middle income countries: a systematic review. *Global health research and policy*, 3, 17.
- Zanchetta, M., Fredericks, S., Mina, E. S., Schwind, J., Sidani, S., Miranda, J., Santos, W.S., Bookey-Bassett, S., Ehtesham, N., Ziegler, E., Fernandes, J. P., Lee, K., Bailey, A., Espin, S., Rose, D., & Lee, C. (2021). Sustaining undergraduate nursing students' research education. *Escola Anna Nery*, 25(3), e20200293.
- Zuchowski, I., Heyeres, M. & Tsey, K. (2020). Students in Research Placements as Part of Professional Degrees: A Systematic Review. *Australian Social Work*, 73(1), 48-63.