

Faculty-Librarian Collaboration: Developing Health Sciences Undergraduate Students' Research Skills

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Abstract: Undergraduate students in health and allied health professions need to develop information literacy (information literacy) skills to decide which interventions, therapies, and methods should be used to improve the quality of life of their clients. These skills are learned through a combination of academic and clinical exposure. Evidence-based practice (EBP) is an essential set of skills and knowledge all health sciences students should have to make the best clinical decisions. However, information literacy and EBP skills are seldom taught together, deemphasizing their natural connection. Collaboration between faculty and librarian can enable this correlation. The paper is a call to invite librarians to collaborate with teaching faculty to integrate information literacy skills in health disciplines to improve the quality of student research, meet professional standards, and help them understand EBP fundamentals that they will carry with them after graduation.

Keywords: Academic libraries, instruction, partnerships, communication

Introduction

A growing number of accrediting agencies, as well as professional and national organizations, expect undergraduate health sciences programs to cover evidence-based practice (EBP) principles in their curriculum (Albarqouni et al., 2018; Commission for the Accreditation of Athletic Training Education [CAATE], 2012, 2018; Soon et al., 2020). However, the language used in some of the accreditation standards and competencies to describe EBP varies widely to allow health professionals to meet the rapid changes in their areas (Bradley, 2013). EBP combines the best research evidence, clinical expertise, patient values, and circumstances to make clinical decisions (Yoon et al., 2020).

The methods used in teaching EBP differ between subjects, departments, and institutions (Larsen et al., 2019; Lehane et al., 2019). Nevertheless, even with accreditation guidelines and faculty striving to incorporate EBP in the classroom, few students have the knowledge and skills to implement EBP to improve client outcomes (De Vries & Williams, 2022; Hitch et al., 2021; Keeley et al., 2016; Steffen & Reid, 2017). From the authors' experiences and a growing body of literature (Aglen, 2016; Cantwell et al., 2021), undergraduate students, in particular, have difficulty understanding the EBP process and its importance because they lack foundational knowledge and skills in information literacy (information literacy).

Information literacy is "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" (Association of College and Research Libraries Framework [ACRL], 2016, para. 6). Without these fundamental skills, students cannot effectively develop the ability to find EBP, analyze, and implement practical interventions, and use the external evidence to make ethical, evidence-based practice decisions for their patients or clients (da Silva et al., 2015; Lam & Schubert, 2019). Studies in health education suggest that incorporating EBP into a specific disciplinary context is an effective way to enhance the quality of student research and an integral part of educating future healthcare professionals (Kumah et al., 2022). It is through the development of research skills that students will succeed in their EBP research. To date, there has been little interdisciplinary crossover of scholarship about EBP, and the focus has remained on nursing (Marlowe et al., 2020; Snibsøer et al., 2018; Thomas et al., 2019). The connection between EBP and information literacy has also focused on nursing, which was an earlier adopter of EBP in the curriculum than other allied health disciplines (Farokhzadian et al., 2021; McGowan, 2019; Ramis et al., 2019). This paper investigates how to close the gap between EBP and information literacy by providing practical examples of the impact that faculty-librarian collaborations can have in teaching EBP through information literacy in students' undergraduate

education in health and allied health professions. These collaborations can extend beyond one library instruction session designed, generally, to improve students' confidence in conducting research. The authors provide practical examples of more targeted collaborations, developed from partnerships with faculty, and tips to facilitate student development of critical thinking skills that are based on knowledge of the research needs of undergraduate students in the health and allied health professions.

Literature Review

The literature on teaching EBP to undergraduate students focuses on nursing students, offering sparse information on physical therapy, occupational therapy, and kinesiology, and omitting other allied health disciplines such as recreational therapy and physical education (Larsen et al., 2019; Lehane et al., 2019; Nair et al., 2021; Snibsøer et al., 2018). Studies suggest that faculty can infuse EBP into their courses through collaboration with a librarian in the design of assignments (Aronoff et al., 2017; Boruff & Harrison, 2018). The authors suggest that introducing EBP concepts and procedures to students early in their college careers will help them retain knowledge and skills and value EBP in graduate programs or in their profession. More importantly, students will likely gain confidence in conducting EBP research and continue to use it in the workplace (Ramis et al., 2017).

Librarians assist faculty and students in numerous ways. They can guide students in connecting content and research (Hvizdak et al., 2019; Pellegrino, 2012), address the faculty's specific needs, and answer questions. Additionally, as experienced by the authors, students will tend to seek future help, thus taking ownership of their learning. Collaborations between librarians and faculty can generate engaging assignments that improve student learning, such as a book discussion (Haley et al., 2019); expand scholarly collaborations between faculty and librarians (Higgins et al., 2017); and support critical thinking (Brooks & Bigelow, 2015; Zanin-Yost & Dillen, 2019). In general, instruction librarians tailor their sessions to the specific needs of the students and the course's objectives. To structure their instruction, some librarians use the ACRL Framework (2016), a set of guidelines to help students develop critical thinking skills to find and discern information, use it ethically, and create new knowledge. Librarians can also offer faculty a wealth of assistance of which faculty may be unaware. Some common forms of assistance include creating online guides, suggesting material to use in the classroom, assisting in developing goals and learning objectives, and conducting research instruction sessions.

Fostering EBP Knowledge Through Information Literacy Skills

The EBP process, regardless of health specialty, comprises five steps: ask a question, acquire the information, appraise the information, apply the knowledge, and assess the results (Ferreira et al., 2022; Guyatt et al., 2015; Rubin, 2007; Yoon et al., 2020). Expanding on these

steps, the authors noted that when students apply EBP they also need to think critically about the following concepts:

1. *Frame the clinical question.* The Population, Intervention, Comparison, and Outcome (PICO) question is the most used approach. The PICO-framed question will include all necessary elements specific to a client's needs.
2. *Collect the evidence.* Students need to consider external and internal evidence. External evidence comes from the literature review and provides specific data on studies related to the PICO question. Internal evidence is data collected from the client.
3. *Assess the evidence.* Internal evidence can be assessed using a series of questions that reflect a client's progress. For example, investigate whether an intervention is helping and whether it should be continued. Assessing external evidence requires determining if the information found in the peer-reviewed article is valid and free of bias. For this, students can use standardized critical appraisal tools such as the *CASP Checklists* (Critical Appraisal Skills Programme, n.d.) and PRISMA (EQUATOR Network, n.d.).
4. *Make a clinical decision.* Using their clinical expertise, the external and internal evidence, and the client's expectations, the students must develop a treatment when their PICO question refers to a therapy question.
5. *Assess the treatment.* The last step in the EBP process is to determine how the initial treatment works by assessing the client's performance.

The authors have experienced these recurring issues with undergraduate students and their EBP research:

- Formulating the PICO question
- Conducting a literature review (including selecting the appropriate search terms)
- Appraising the information

The authors developed the following solutions in collaboration with faculty and implemented them to improve student success. They used the ACRL Framework to provide best practices combining information literacy knowledge to execute EBP research.

Formulating the PICO Question

Formulating a good PICO question and revising it when necessary are essential to finding the appropriate information. Librarians and faculty should aim to show students how to identify the PICO components and define the concepts within the question that will be used to conduct a literature search. As suggested by Yoon and colleagues (2020), both faculty and librarians must decide on two critical first steps. First, which PICO question to use in class and in research instruction, as there are some variations (e.g., PICOT, PICOTT). Second, which questions

should be used to identify each step of the PICO process, for example, frequent queries for the P, patient, are “Who are the patients?” “Where are the patients?” and “What is the problem?”

There are many options for teaching PICO strategy to students. For example, the librarian can develop a worksheet that is color-coded for each component and then ask students to highlight in the same colors the sections from the resources they find. Using colors to make a correlation between the PICO and the information is an effective method for memory retention (Diachenko et al., 2022). Or, as suggested by Melnyk and Fineout-Overholt (2010), librarians might use a fill-in sentence to help students identify all parts of a PICO question. For example, if the aim is to have an intervention therapy, they can use a sentence such as, “In P, what is the effect of I on O compared to C within T?” to direct students. However, it is essential to reiterate to students that this method is to guide them in the learning process, and they will need to use their critical thinking skills in the future. The authors found that worksheets can help illustrate how each part of the question, and the individual parts, are connected to the research process. The authors recommend keeping the example clear and general to help students understand how to construct a PICO question, especially because most undergraduate students might not have yet been exposed to medical vocabulary. During the research session, the librarian should provide ample time to practice identifying PICO questions and might also tie in specific examples and content covered in class. Examples may encourage students to speak out and increase their level of confidence.

In addition to understanding how to develop the PICO question, it is essential that students realize when to refocus and revise it. Students tend to write queries that are too broad or narrow. For example, “For patients who are runners, what are the effects of taking omeprazole?” may appear reasonable, but it lacks the specificity needed for a PICOT question. A better question would be, “For runners over the age of forty, does taking 30 mg of omeprazole four times a day reduce the risk of acid reflux compared to taking the same dose twice a day?” Often, students assume the PICO question is a formula to answer what they need to find out and persist in looking for something that will not be easy to find because the question is badly formulated.

Conducting a Literature Review

The literature review may be the most challenging part of the EBP process, because many students may have had little practice. From the authors’ experiences, students become frustrated when they are unaware of available sources, including current, print, and multidisciplinary sources. Since librarians are usually given one library instruction session to discuss the PICO searching process, the authors highly recommend that the faculty member and the librarian plan the session intentionally. The authors found that providing handouts ahead of

the research session and creating an online research guide as a follow-up are effective steps, as the material can be broken down into smaller and more digestible information for undergraduate students.

Handouts and other supporting material can be very helpful. For example, handouts might include specific database information, or provide further explanations for basic searching strategies and techniques, such as the difference between the Boolean operators (e.g., “AND,” “OR”), how to create a list of synonyms, and how to limit the search by specific parameters (e.g., date, type of methodology). Making these handouts available online via the library’s platform or linking them to the course management system (e.g., Canvas, Blackboard, Brightspace) will ensure that students can conveniently access the information when needed.

Libraries subscribe to several databases that contain EBP information, and students need to understand the types of information each one will retrieve and how to use keywords, limiters, and Boolean logic. To make most of the time available, the authors often provide students with tables that include dates of coverage, content, and searching tips for different recommended databases. They also offer a table that illustrates how to select keywords for each PICO concept and how to develop a search strategy and find related terms or synonyms in the different databases. Table 1 illustrates a sample search to show how to research in three commonly used undergraduate databases: CINAHL (Cumulative Index of Nursing and Allied Health Literature), PubMed, and the Cochrane Library.

Table 1
Understanding a Search Strategy

	Keywords	CINAHL	PubMed	Cochrane Library
Population	Adults	Adults	Adults	Adults
Intervention	St. John’s Wort	St. John’s Wort	Hypericum	(Hypericum OR St. John’s Wort)
Comparison	Antidepressants	Antidepressive Agents	Antidepressive Agents	
Outcome	Lessen Depression	Affective Disorders	(Depression OR depressive disorder)	
Limiters		Research Articles	Randomized Controlled Trial, Meta-analysis, Systematic Reviews	Systematic Reviews

While conducting a literature review, the librarian may also mention additional support that the library can offer, such as interlibrary loan when documents are otherwise unavailable at the home institution. They may also instruct students on how to use Zotero and Mendeley citation management software so that they can keep track of citations and decrease the anxiety of citing correctly.

Appraise the Information

Although this last step is used most in graduate courses, undergraduate students can still benefit from techniques used to evaluate external literature. Undergraduate students typically lack the skill to evaluate information and librarians and faculty can help by introducing them to appraisal tools. One such tool is the *CASP Checklists* (Critical Appraisal Skills Programme, n.d.) which provides step-by-step instructions on how to critique the information of an article. The authors contend that focusing the research on one type of study (e.g., randomized case trial, systematic review) appears to help students learn the process, which can later be applied to other kinds of research. Using appraisal tools might allow students to realize that even peer-reviewed articles can have weaknesses. As part of the scientific cycle, these articles need to be evaluated by readers even after their publication.

The most crucial aspects of helping students with the EBP research process is to show them the relevance to what they are doing, that the faculty member and the librarian have the same objectives and use the same terminology in the research process, and that help is available to them. The faculty and librarian may need time to develop their collaboration, understand student goals, and learn from each other. Undoubtedly, this cooperation will take time. However, both parties will find it rewarding that these efforts have proven to increase student learning in the EBP process, including PICO searching. Students will transfer EBP skills to their upper-division graduate courses and, eventually, into their profession.

Recommended Strategies for Collaboration

Identify a Collaborator

Ideally, librarians and faculty should be involved in the same subject area as this facilitates conversation and understanding of methods, terminology, and goals. Most health science librarians will have a solid background in the EBP process and will be eager to collaborate with faculty members. Meetings between the faculty and the librarian should be scheduled several weeks before the course is taught to allow ample time for them to prepare for the library instruction session. At times, faculty might not be interested in collaboration, but

instead would prefer a traditional one-shot library instruction session. In this case, the librarian will need to still discuss the objectives of their instruction. To help students succeed with their research, a best practice is to supplement one's teaching with handouts, links to resources, and other appropriate material.

Define the Goals

The faculty and librarian should include in their planning the learning objectives for the assignment and the class. A good starting point will be using the departmental goals, the accreditation requirements, and the ACRL Framework. By creating a table of the expected topics, the librarian and faculty will ensure to cover essential and fundamental needs. Second, the goals that each one wants to achieve should be discussed, including their roles (i.e., what each one will cover) and expectations. Third, they need to identify and access needed resources in the session. These resources may be placed in the library's Course Reserves collection or posted online (via the library research guides or available in the course's management system). These resources could be in the form of guides and videos.

Break Down the Process

In general, a library instruction session lasts the length of a class. The authors agree that while it is important to cover the EBP process, there is also no need to do it all at once. Undergraduate students will find it difficult to digest one hour of information, and it is best to break down the process (Price, 2017; Ramis et al., 2019). A possible solution is to split up the EBP library session into multiple sessions, if possible. Another option is for the faculty member to integrate the library component by covering the content in class. For example, after the faculty has covered PICO, the librarian can show the students resources on how to construct the PICO question and provide search tips.

Take Time to Reflect

When the project is over, the librarian and faculty member often move on to other tasks and reconnect once a new opportunity arises. Finding the time to reflect and discuss what, when, or how the students performed well is essential to maintain the librarian-faculty collaboration moving forward and expanding. Some questions to help direct the conversation may include:

- Where were the goals achieved?
- Where do the students perform well/poorly?

- Was the practice time enough?
- What questions did the librarian/faculty receive from students?
- What can we do better next time?

Conclusion

Undergraduate students enter the library research session thinking they know how to conduct research. If an article is peer-reviewed, why should they worry about it? However, conducting research in the health and allied health professions is more than blindly trusting peer-reviewed articles. EBP requires students to think about the research process concerning the needs of the patients, to find current and reliable information to use in their intervention, and to understand how to apply different information if the perfect source is not found. The EBP process may initially seem overwhelming for students in terms of the amount of material covered. However, many students have been exposed to some form of information literacy, for example, in other college courses or attending a library session. Showing that information literacy and EBP have much in common will ease their anxieties. Librarians, particularly new librarians, may find it challenging to connect with teaching faculty. Networking and inviting teaching faculty to talk about the need of their students is essential in fostering success. Librarians must show how they can integrate the library's resources into the course, assist with developing assignments, and provide continuous and excellent support to faculty and students. By creating accessible information and a presence, librarians can show students that the skills they learn in college will significantly benefit them once they enter their professions.

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>
- Albarqouni, L., Hoffmann, T., Straus, S., Olsen, N., Young, T., Ilic, D., Shaneyfelt, T., Haynes, B., Guyatt, G., & Glasziou, P. (2018). Core competencies in evidence-based practice for health professionals: Consensus statement based on a systematic review and Delphi survey. *JAMA Network Open*, 1(2), e180281.
<https://doi.org/10.1001/jamanetworkopen.2018.0281>
- Aronoff, N., Strellrecht, E., Lyons, A. G., Zafron, M. L., Glogowski, M., Grabowski, J., & Ohtake, P. J. (2017). Teaching evidence-based practice principles to prepare health professions

- students for an interprofessional learning experience. *Journal of the Medical Library Association*, 105(4), 376-384. <https://doi.org/10.5195/jmla.2017.179>
- Association of Colleges & Research Libraries. (2016). *Framework for information literacy for higher education*. <https://www.ala.org/acrl/standards/ilframework>
- Boruff, J., & Harrison, P. (2018). Assessment of knowledge and skills in information literacy instruction for rehabilitation sciences students: A scoping review. *Journal of the Medical Library Association*, 106(1), 15–7. <https://doi.org/10.5195/jmla.2018.227>
- Bradley, C. 2013. Information literacy in the programmatic university accreditation standards of select professions in Canada, the United States, the United Kingdom, and Australia. *Journal of Information Literacy*, 7(1), 44–68. <http://dx.doi.org/10.11645/7.1.1785>
- Brooks, S., & Bigelow, S. (2015). Preparing students for research: Faculty/librarian collaboration in a pre-doctoral physical therapy research course. *Health Information Library Journal*, 32(4), 332–338. <https://doi.org/10.1111/hir.12123>
- Cantwell, L. P., McGowan, B. S., Planchon Wolf, J., Slebodnik, M., Conklin, J. L., McCarthy, S., & Raszewski, R. (2021). Building a bridge: A review of information literacy in nursing education. *Journal of Nursing Education*, 60(8), 431–436. <https://doi.org/10.3928/01484834-20210722-03>
- Commission for the Accreditation of Athletic Training Education. (2012). Standards for the accreditation of professional athletic training programs. https://caate.net/wp-content/uploads/2018/02/2012-ProfessionalStandards_.pdf
- Commission for the Accreditation of Athletic Training Education. (2018). 2020 standards for accreditation of professional athletic training programs: Master’s degree programs. <https://caate.net/wpcontent/uploads/2018/09/2020-Standards-for-Professional-Programs-copyeditedclean.pdf>
- Critical Appraisal Skills Programme (n.d.). *CASP checklists*. <https://casp-uk.net/casp-tools-checklists/>
- Da Silva, T. M., Costa, L. C., Garcia, A. N., & Costa, L. O. (2015). What do physical therapists think about evidence-based practice? A systematic review. *Manual Therapy*, 20(3), 388–401. <http://doi.org/10.1016/j.math.2014.10.009>
- De Vries, D., & Williams, B. (2022). A qualitative study of the process undergraduate health professions students utilize while conducting a scoping review. *The Internet Journal of Allied Health Sciences and Practice*, 20(3), Article 6.
- EQUATOR Network. (n.d.). *The PRISMA 2020 statement: An updated guideline for reporting systematic reviews*. <https://www.equator-network.org/reporting-guidelines/prisma/>
- Farokhzadian, J., Jouparinejad, S., Fatehi, F., & Falahati-Marvast, F. (2021). Improving nurses’ readiness for evidence-based practice in critical care units: Results of an information literacy training program. *BMC Nursing*, 20. <https://doi.org/10.1186/s12912-021-00599-y>

- Ferreira, R., Martins, P., Pimenta, N., & Gonçalves, R. (2022). Measuring evidence-based practice in physical therapy: A mix-methods study. *PeerJ*, 9, 1266. <https://doi.org/10.7717/peerj.12666>
- Guyatt, G., Drummond, R., Meade M. O., & Cook D. J. (Eds.). (2015). *Users' guides to the medical literature: A manual for evidence-based clinical practice* (3rd ed.). McGraw Hill.
- Haley, J., McCall, R. C., Zomorodi, M., de Saxe Zerdan, L., Moreton, B., & Richardson, L. (2019). Interprofessional collaboration between health sciences librarians and health professions faculty to implement a book club discussion for incoming students. *Journal of the Medical Library Association*, 107(3), 403–410. <https://doi.org/10.5195/jmla.2019.563>
- Higgins, M., DeVito, J., Stieglitz, S., Tolliver, R., & Tran, C. (2017). Better together: An examination of collaborative publishing between librarians and stem and health sciences faculty. *Issues in Sciences and Technology Librarianship*, 86. <https://journals.library.ualberta.ca/istl/index.php/istl/article/view/1699>
- Hitch, D., Nicola-Richmond, K., Richards, K., Stefaniak, R. (2021). Student perspectives on factors that influence the implementation of evidence-based practice in occupational therapy. *JBI Evidence Implementation*, 19(4), 409–418. <https://doi.org/10.1097/XEB.0000000000000285>
- Hvizdak, E., Prokosch, J., & Johnson, C. (2019). An analysis of help-seeking behaviors in a required first-year course. *Public Services Quarterly*, 15(4), 300–318. <https://doi.org/10.1080/15228959.2019.1652722>
- Keeley, K., Walker, S. E., Hankemeier, D. A., Martin, M., & Cappaert, T. A. (2016). Athletic trainers' beliefs about and implementation of evidence-based practice. *Journal of Athletic Training*, 51(1), 35–46. <https://doi.org/10.4085/1062-6050-51.2.11>
- Kumah, E., McSherry, R., Bettany-Saltikov, J., Schaik, P., Hamilton, S., Hogg, J., & Whittaker, V. (2022). Evidence-informed vs evidence-based practice educational interventions for improving knowledge, attitudes, understanding, and behaviour towards the application of evidence into practice: A comprehensive systematic review of undergraduate students. *Campbell Systematic Review*, 18(2). <https://doi.org/10.1002/cl2.1233>
- Lam, C., & Schubert, C. (2019). Evidence-based practice competence in nursing students: An exploratory study with important implications for educators. *Worldviews Evidence-Based Nursing*. 16(2), 161–168. <https://doi.org/10.1111/wvn.12357>
- Larsen, C., Terkelsen, A., & Carlsen, A., & Kristense, H. (2019). Methods for teaching evidence-based practice: A scoping review. *BMC Medical Education*, 19, 259. <https://doi.org/10.1186/s12909-019-1681-0>
- Lehane, E., Leahy-Warren, P., O'Riordan, C., Savage, E., Drennan, J., O'Tuathigh, C., O'Connor, M., Corrigan, M., Burke, F., Hayes, M., Lynch, H., Sahm, L., Heffernan, E., O'Keeffe, E., Blake, C., Horgan, F., Hegarty, J. (2019). Evidence-based practice education for healthcare

- professions: an expert view. *BMJ Evidence-Based Medicine*, 24(3), 103–108. <https://doi.com.10.1136/bmjebm-2018-111019>
- Marlowe, D., Cannata, E., Bertram, R., Choi, S., & Kerns, S. E. U. (2020). Teaching evidence-based practice: A comparison of two disciplines. *Journal of Family Social Work*, 23(2), 133–150. <https://doi.org/10.1080/10522158.2019.1694343>
- McGowan, B. S. (2019). Reimagining information literacy instruction in an evidence-based practice nursing course for undergraduate students. *Journal of the Medical Library Association*, 107(4), 572–578. <https://doi.org/10.5195/jmla.2019.663>
- Melnyk, B., & Fineout-Overholt, E. (2010). *Evidence-based practice in nursing & healthcare: A guide to best practices*. Lippincott Williams & Wilkins.
- Nair, S. P., Panhale, V. P., & Nair, N. (2021). Perceived barriers to evidence-based practice among physiotherapy students. *Journal of Education and Health Promotion*, 10, 17. https://doi.org/10.4103/jehp.jehp_410_20
- Pellegrino, C. (2012). Does telling them to ask for help work? Investigating library seeking help-seeking behavior in college undergraduates. *Reference & User Services Quarterly*, 51(3), 272–277. <https://journals.ala.org/index.php/rusq/article/view/3130/3248>
- Price, R. (2017). The four-part literature review process: Breaking it down for students. *College Teaching*, 65(2), 88–91. <https://doi.org/10.1080/87567555.2016.1276042>
- Ramis, M., Chang, A., & Nissen, L. (2017). Undergraduate health students' intention to use evidence-based practice after graduation: A systematic review of predictive modeling studies. *Worldviews Evidence-based Nursing*, 15(2), 140–148. <https://doi.org.10.1111/wvn.12268>
- Ramis, M., Chang, A., Conway, A., Lim, D., Munday, J., & Nisser, L. (2019). Theory-based strategies for teaching evidence-based practice to undergraduate health students: A systematic review. *BMC Medical Education*, 19, 267. <https://doi.org/10.1186/s12909-019-1698-4>
- Rubin, A. (2007). *Practitioner's guide using research for evidence based practice*. Wiley.
- Snibsoer, A. K., Graverholt, B., Nortvedt, M., Riise, T., & Espehaug, B. (2018). Evidence-based practice profiles among bachelor students in four health disciplines: A cross-sectional study. *BMC Medical Education*, 18, article 210. <https://doi.org/10.1186/s12909-018-1319-7>
- Soon, Y., Murray, C., Aguilar, A., & Boshoff, K. (2020). Consumer involvement in university education programs in the nursing, midwifery, and allied health professions: A systematic scoping review. *International Journal of Nursing Studies*, 109, 103619.
- Steffen, S., & Reid, C. (2017). Evidence-based practice in therapeutic recreation: An examination of clinical decision-making in mental health. *Therapeutic Recreation Journal*, 51(1). <https://doi.org/10.18666/TRJ-2017-V51-I1-7578>

- Thomas, A., D. Gruppen, L., van der Vleuten, C., Chilingaryan, G., Amari, F., & Steinert, Y. (2019). Use of evidence in health professions education: Attitudes, practices, barriers and supports. *Medical Teacher*, 41(9), 1012–1022. <https://doi.org/10.1080/0142159X.2019.1605161>
- Yoon, S. H., Kim, M., Tarver, C., & Loo, L. K. (2020). “ACEing” the evidence within physical medicine and rehabilitation (PM&R). *MedEdPORTAL*, 16, 11051. https://doi.org/10.15766/mep_2374-8265.11051
- Zanin-Yost, A., & Dillen, C. (2019) Connecting past to future needs: Nursing faculty and librarian collaboration to support student’s academic success. *Journal of Library Administration*, 59(1), 45–58. <https://doi.org/10.1080/01930826.2018.1549407>

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