



Research article

An analysis of evidence-based practice courses in Korean nursing education systems



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ABSTRACT

Objective: This study aims to examine the current status of evidence-based practice (EBP) courses and EBP-related courses in Korean nursing education systems.

Method: Subject institutions were 159 institutions including 99 universities and 60 colleges with a bachelor's degree program accredited by the Korean Accreditation Board of Nursing Education. Two researchers independently collected data from the subject institutions based on the curricula published on the website of each university or college, and the collected datasets were cross-checked to ensure data accuracy.

Results: EBP courses were found in a small portion of institutions (13.2%). Research courses were offered in most institutions (98.7%), but they were usually provided to third- or fourth-year students.

Conclusion: Understanding the concept of EBP and knowledge of nursing research and statistics are both prerequisites to strengthening the EBP competence of nursing students. Therefore, it is imperative to equip them with the required knowledge prior to their clinical practicum.

1. Introduction

Evidence-based practice (EBP) is a competence essential for nurses in the 21st century (Albarqouni et al., 2018). EBP helps nurses make appropriate clinical decisions with the best current evidence, nurses' expertise, and patients' values and preferences (Melnik and Fineout-Overholt, 2019). Through EBP, it is possible to secure patient safety and improve the quality of nursing as well as reduce the gap between theories and the practice of nurses (Svejda et al., 2012). Therefore, EBP is an important competence for baccalaureate nursing students and can be developed through systematic curriculum management in college education.

Around the globe, diversified efforts are put forth toward improving the EBP competence of nursing students. For example, curricula are revised to operate more research courses that reflect the concept of EBP more thoroughly (Bloom et al., 2013), and EBP education models are developed to enhance this competence more effectively (Moch and Cronje, 2010). In addition, clinical experience, in addition to theoretical knowledge, is important for nursing students in securing EBP competence. For this reason, a three-year EBP course is operated in connection

with theoretical learning, in-school practice, and clinical practice (Finotto et al., 2013). In the case of the U.K., EBP education is obligatory at nursing colleges. Various teaching methods are adopted for students to improve performance as well as belief in the value of EBP (Reid et al., 2017).

The Korean Accreditation Board of Nursing Education emphasizes the importance of establishing an education system based on learning performance in order to improve the quality of Korean nursing education. Since 2004, nursing bachelor's degree programs have been evaluated through a five-year certification system. The Korean Accreditation Board of Nursing Education presents 12 indices of nursing bachelor's degree program performance, none of which is related directly to EBP competence. However, learning performance relevant to EBP competence may be evaluated in terms of integrated nursing skill application, nursing process application based on critical thinking, clinical inference, and nursing research planning and direct implementation. Each school needs to operate curricula for required learning achievements from entrance to graduation. Curriculum revision can be done autonomously at each university. But due to the limited credits required for graduation, there may be restrictions on course opening.

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Recent studies on the EBP competence of clinical nurses in Korea indicate that there is an urgent need for reorganization of existing nursing curricula. According to one survey conducted among general hospital nurses regarding factors affecting the level of EBP preparation and evidence-based practical competence, 70% of the subjects answered that they did not know EBP. Nurses showed the lowest level of knowledge regarding how to convert required information into clinical questions. Their level of belief in research finding applicability was also low, and they found it difficult to interpret statistical data. These survey results indicate that research capability was the factor with the most significant effect on EBP competence. However, about 78% of the subjects recognized the necessity of research grounds in practical clinical settings (Ryu et al., 2016). In a survey conducted among nurses who had been mentored by a preceptor (a role model for new nurses), regarding their belief, knowledge, and performance level of EBP, about 61% of the subjects answered that they knew little or nothing about EBP even though 66% of the subjects had completed research courses (Yoo and Oh, 2012).

These findings imply that Korean nursing education needs to be changed in the context of EBP, with demands for this curriculum change increasing in Korean nursing education circles as well (Oh et al., 2016). As far as we know, there have been no papers that have specifically analyzed the EBP curriculum of all Korean nursing colleges. Accordingly, the target of this study is to examine the actual condition of EBP and EBP-related course operation among nursing colleges in Korea and provide a basis for curriculum revision based on the data of program learning performance presented by the Korean Accreditation Board of Nursing Education. The findings of this study are anticipated to be used to design education programs for improving the EBP competence of nursing students.

2. Method

2.1. Study design

This was a descriptive study that examined EBP courses and is intended to provide a basis for revising curricula designed to improve EBP competency among Korean nursing students.

2.2. Research target

Research targets included institutions with five-year nursing bachelor's degree programs that have been certified by the Korean Accreditation Board of Nursing Education. The targets were identified from information posted on the Korean Accreditation Board of Nursing Education website as of June 12, 2018. Among the 171 institutions listed, 107 were universities and 64 were colleges.

2.3. Materials and procedure

Curricula were analyzed based on the information posted on the website of each institution. This information was openly accessible to everyone. Therefore, there was no need to receive approval from an ethics committee. Target courses included EBP courses and EBP-related courses. EBP-related courses were selected among materials relevant to nursing research, nursing statistics, nursing informatics, and nursing processes based on the literature review (Oh et al., 2016). Data were collected using an Excel-based analysis framework. Analysis items included school names, locations, course names, program years and semesters for such subjects, and so forth. To ensure data accuracy, two researchers collected the same information from each university and college separately, and then collected data was cross-checked for data integrity. Data analysis was conducted on entries from 159 institutions including 99 universities and 60 colleges, excluding 12 of the 171 total educational institutions due to insufficient or unavailable information on those institutions' websites.

2.4. Analysis

The program years and semesters, the number of courses were analyzed and converted into frequency and percentage data.

3. Results

3.1. EBP courses and EBP-related courses offered

EBP courses were offered in 21 of the 159 schools (13.2%): in 13 of the 99 universities (13.1%) and in eight of the 60 colleges (13.3%). Nursing research courses were offered in 157 institutions overall (98.7%): in 98 universities (99.9%) and in 59 colleges (98.3%). In addition, 28 out of those 157 schools (17.8%) offered nursing research courses during two or more semesters. Nursing process courses were offered in 138 of the institutions (86.6%): in 80 universities (80.8%) and in 58 colleges (96.7%). Nursing informatics courses were offered in 89 of the institutions (56.0%): in 57 universities (57.6%) and in 32 colleges (53.3%). Statistics courses were offered in 79 institutions (49.7%): in 47 universities (47.5%) and in 32 colleges (53.3%). These results are shown in Table 1.

3.2. Program years and semesters in which EBP and EBP-related courses were offered

Results of the analysis of years and semesters for which each course was offered in target institutions are presented in Table 2. For some institutions, this information could not be found on their web pages. EBP courses were offered in the second semester of the fourth year in nine institutions (42.9%) out of 21 and in the first and second semesters of the third year in five institutions (23.8%). Nursing research courses were offered in the first semester of the fourth year in 55 institutions (35.3%) out of 156, in the first semester of the third year in 35 institutions (22.4%), and in the second semester of the third year in 32 institutions (20.5%). Nursing process courses were offered in the second semester of the second year in 81 institutions (58.7%) out of 138 and in the first semester of the second year in 49 institutions (35.5%). Nursing informatics courses were offered in the second semester of the third year in 18 institutions (21.2%) out of 85, in the second semester of the second year in 16 (18.8%), in the first semester of the second year in 15 (17.6%), in the first semester of the third year in 14 (16.5%), and in the second semester of the fourth year in 13 (15.3%). Statistics courses were offered in the first semester of the second year in 19 institutions (24.4%) out of 78, in the second semester of the second year in 18 (23.1%), and in the second semester of the first year and the first and second semesters of the third year in nine (11.65%).

3.3. Number of EBP courses and EBP-related courses offered

Among 159 institutions, 61 offered three courses (38.4%), 48 offered four courses (30.2%), and 45 offered two courses (28.3%). A single course was offered by three institutions (1.9%), and two offered five courses (1.3%).

Table 1
EBP courses and EBP-related courses that were offered.

School type	EBP	Nursing research	Nursing process	Nursing informatics	Statistics
	n (%)	n (%)	n (%)	n (%)	n (%)
Total (N = 159)	21 (13.2)	157 (98.7)	138 (86.6)	89 (56.0)	79 (49.7)
University (N = 99)	13 (13.1)	98 (99.9)	80 (80.8)	57 (57.6)	47 (47.5)
College (N = 60)	8 (13.3)	59 (98.3)	58 (96.7)	32 (53.3)	32 (53.3)

Table 2
Years and semesters for which EBP courses and EBP-related courses were offered.

Year-semester	EBP	Nursing research	Nursing process	Nursing informatics	Statistics
	N = 21	N = 156	N = 138	N = 85	N = 78
1-1	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)	2 (2.6)
1-2	0 (0.0)	0 (0.0)	2 (1.4)	3 (3.5)	9 (11.5)
2-1	0 (0.0)	6 (3.8)	49 (35.5)	15 (17.6)	19 (24.4)
2-2	0 (0.0)	12 (7.7)	81 (58.7)	16 (18.8)	18 (23.1)
3-1	5 (23.8)	35 (22.4)	5 (3.6)	14 (16.5)	9 (11.5)
3-2	5 (23.8)	32 (20.5)	0 (0.0)	18 (21.2)	9 (11.5)
4-1	2 (9.5)	55 (35.3)	0 (0.0)	6 (7.1)	6 (7.7)
4-2	9 (42.9)	16 (10.3)	0 (0.0)	13 (15.3)	6 (7.7)

4. Discussion

The intent of this study was to provide a basis for revising curriculum to improve EBP competence among Korean nursing students. To this end, the actual condition of EBP course and EBP-related course operation among nursing schools in Korea (universities and colleges) was examined.

The results showed that the percentage of nursing schools in Korea opening independent EBP courses among the 159 schools analyzed was as low as about 13%. When curricula among 21 institutions in Taiwan were compared (Hung et al., 2015), the results indicated that about 86% of them conducted EBP education, about 22% operated independent EBP courses, and 50% taught EBP concepts in other courses. This study analyzes content available on the websites of the target institutions, and it does not examine whether other courses include education on the concept of EBP. However, most institutions focused on courses for state examinations while EBP courses were offered by only 15% of schools, which indicates the necessity and importance of emphasizing EBP education in academic circles.

According to the Korean Accreditation Board of Nursing Education, curricula in Korean nursing colleges and universities are divided into liberal arts courses and majors, and the credits for major courses are between 70 and 90 points (Education). Thus, there may be limitations to offering separate EBP education courses and integrating EBP education in existing courses may be more efficient. The results of this study indicated that most institutions offered nursing research courses and nursing process courses. One major factor affecting EBP competence among Korean clinical nurses was research ability (Ryu et al., 2016), and two variables affecting Korean nursing students' attitude towards evidence-based practice were critical thinking and EBP knowledge (Choi et al., 2016).

Nursing colleges and universities in Korea need to improve their education programs by adjusting the existing courses. The University of North Florida School of Nursing in the United States redesigned and improved three research courses so that undergraduate students could complete EBP courses (Bloom et al., 2013). In the first course, EBP concepts and process of literature review are introduced. This course is offered early in the nursing program. The second course is provided to students who have completed their clinical practicum in the first two semesters. Critical appraisal of a primary research report is emphasized in this course. The third course, open for those in their final semester, is operated with a simulation approach to afford students the opportunity to participate in an evidence-based project. This education program provides a good example of how education programs can better incorporate EBP.

Many colleges and universities around the globe redesign curricula and measure their effectiveness on a regular basis so that EBP education is provided over general nursing curricula from lower to higher program years. The University of Modena and Reggio Emilia in Italy, for example,

developed a three-year EBP course connecting nursing disciplines to laboratory and clinical training with the aim to help students enhance their EBP process application skills. In the U.K., since EBP education became obligatory during all three years of every undergraduate nursing degree program, students' professed belief in and use of EBP improved in an assessment of the practical application of a blended learning strategy using lectures, small group teaching, and an online eResource (Reid et al., 2017). The University of Wisconsin-Eau Claire has developed Student-Enabled Practice Change (UPEC) curricular models to help students develop competence and become EBP leaders (Moch and Cronje, 2010).

The results of this research indicate that among nursing colleges and universities in Korea, EBP courses and nursing research courses were most commonly part of the third-year and fourth-year semesters. Nursing process courses were most often included in the second-year semesters. Particularly regarding the EBP courses, about 43% were provided in the second semester of the fourth year. Malik et al. (2017) emphasize that students' experience of EBP processes in practical clinical settings is important for EBP competence improvement. Moch et al. (2010) also emphasize the importance of providing education programs that help students develop scientific research process skills, critical thinking, and information literacy skills, especially through practical clinical training so that students' belief in and attitude toward EBP can be improved. Since clinical training for nursing students' EBP competence is of great importance, such factors as critical thinking, understanding of research and statistics, and acquisition of theoretical knowledge need to precede clinical education for effective competence development. Among nursing colleges and universities in Korea, clinical education is implemented mostly in the third year. Therefore, acquisition of theoretical knowledge regarding the concept and process of EBP needs to be practiced early in nursing curricula.

In Korea, there have been few reports on the development and effectiveness of Korean EBP education models. However, the necessity of curriculum revision has been recognized, and there are high demands for EBP courses (Oh et al., 2016). It is expected, therefore, that reporting the evidence of their effectiveness will promote the development of varied education programs for EBP competence enhancement among Korean nursing students.

This study is of significance in that it analyzes the entire nursing curricula of four-year nursing colleges and universities in Korea with bachelor's degree programs that have been certified by the Korean Accreditation Board of Nursing Education. However, data from some institutions may not reflect their current status, since only the data available on their websites was referred to and analyzed. We attempted to find open courses that were classified as elective major courses and not mandatory courses by searching noticeboards, schedules, etc. posted on the schools' websites as thoroughly as possible, but some available courses may not be readily found on an institution's website. These limitations must be recognized when interpreting the findings of this study.

Based on the results of this study, we will develop an EBP course that links campus education and clinical education. Also, the diverse and creative teaching methods and learning contents need to be developed to revise existing course effectively. This is expected to improve the EBP competency of nursing students.

5. Conclusions

EBP competence is a fundamental element for professional nurses. Thus, it needs to be developed systematically through curricula in undergraduate programs. As EBP-related courses were analyzed to identify a basis for efficient curriculum revision, it turned out that about 13% of nursing colleges and universities in Korea conducted evidence-based nursing practice courses. It also turned out that most colleges and universities included EBP and research courses in higher program years. In order to help nursing students develop EBP competence efficiently,

therefore, it is necessary to develop clinical practice programs through which students can experience EBP and to redesign courses to apply various teaching/learning methods so that basic factors for EBP such as critical thinking, knowledge on research utilization, and theoretical knowledge on EBP processes can precede clinical education.

Declarations

Author contribution statement

C. H. Song: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

W. G. Kim: Conceived and designed the experiments; Analyzed and interpreted the data.

Y. J. Lim: Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

References

Albarqouni, L., Hoffmann, T., Straus, S., Olsen, N.R., Young, T., Ilic, D., et al., 2018. Core competencies in evidence-based practice for health professionals: consensus

- statement based on a systematic review and delphi survey. *J. Am. Med. Assoc. JAMA Netw. Open* 1 (2), e180281.
- Bloom, K.C., Olinzock, B.J., Radjenovic, D., Trice, L.B., 2013. Leveling EBP content for undergraduate nursing students. *J. Prof. Nurs. Off. J. Am. Assoc. Coll. Nurs.* 29 (4), 217–224.
- Choi, M.H., Kim, Y.H., Son, H.M., 2016. Factors influencing evidence-based practice attitudes among undergraduate nursing students. *J. Korean Acad. Soc. Nurs. Educ.* 22 (3), 274–282.
- Finotto, S., Carpanoni, M., Turroni, E.C., Camellini, R., Mecugni, D., 2013. Teaching evidence-based practice: developing a curriculum model to foster evidence-based practice in undergraduate student nurses. *Nurse Educ. Pract.* 13 (5), 459–465.
- Hung, H.Y., Huang, Y.F., Tsai, J.J., Chang, Y.J., 2015. Current state of evidence-based practice education for undergraduate nursing students in Taiwan: a questionnaire study. *Nurse Educ. Today* 35 (12), 1262–1267.
- Korean Accreditation Board of Nursing Education. Evaluation criteria of nursing education certification. Retrieved from <http://www.kabone.or.kr/kabon02/index04.php>.
- Malik, G., McKenna, L., Griffiths, D., 2017. Using pedagogical approaches to influence evidence-based practice integration - processes and recommendations: findings from a grounded theory study. *J. Adv. Nurs.* 73 (4), 883–893.
- Melnik, B.M., Fineout-Overholt, E., 2019. Evidence-Based Practice in Nursing & Healthcare: a Guide to Best Practice, fourth ed. Wolters Kluwer, Philadelphia.
- Moch, S.D., Cronje, R.J., 2010. Part II. Empowering grassroots evidence-based practice: a curricular model to foster undergraduate student-enabled practice change...second of a three-part series. *J. Prof. Nurs.* 26 (1), 14–22.
- Moch, S.D., Cronje, R.J., Branson, J., 2010. Part I. Undergraduate nursing evidence-based practice education: envisioning the role of students...first of a three-part series. *J. Prof. Nurs.* 26 (1), 5–13.
- Oh, E.G., Yang, Y.L., Yoo, J.Y., Lim, J.Y., Sung, J.H., 2016. Mixed method research investigating evidence-based practice self-efficacy, course needs, barriers, and facilitators: from the academic faculty and clinical nurse preceptors. *J. Korean Acad. Nurs.* 46 (4), 501–513.
- Reid, J., Briggs, J., Carlisle, S., Scott, D., Lewis, C., 2017. Enhancing utility and understanding of evidence based practice through undergraduate nurse education. *BioMed Cent. (BMC) Nurs.* 16, 1–8.
- Ryu, S.A., Kim, Y.S., Kim, Y.H., 2016. Factors influencing of evidence based practice competency and evidence based practice readiness in general hospital nurses. *J. Kor. Acad. Nurs. Adm.* 22 (5), 448–460.
- Svejda, M., Goldberg, J., Belden, M., Potempa, K., Calarco, M., 2012. Building the clinical bridge to advance education, research, and practice excellence. *Nurs Res Pract* 2012, 826061.
- Yoo, J.Y., Oh, E.G., 2012. Level of beliefs, knowledge and performance for evidence-based practice among nurses experienced in preceptor role. *J. Kor. Acad. Nurs. Adm.* 18 (2), 202–212.