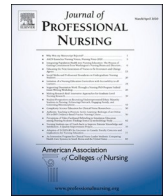


Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of Professional Nursing

journal homepage: www.elsevier.com/locate/jpnu

Achievements and challenges in baccalaureate student nurses' preparation for evidence-based nursing practice: A mixed methods study

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ARTICLE INFO

Keywords:

Baccalaureate nursing education
Evidence-based nursing
Mixed methods research
Student nurses

ABSTRACT

Background: Evidence-based nursing (EBN) implementation is still limited. The effect of the incorporation of this competence into the whole nursing curricula as a cross-cutting topic has not yet been assessed.

Objective: This study aimed to explore the perceptions of final year student nurses of their preparation for EBN practice and its current implementation in the local healthcare system.

Design: This study followed a mixed-methods approach. The data collection methods were a self-administered online questionnaire followed by individual in-depth interviews.

Results: The majority of participants (93.4%) chose asking a colleague as the main source of information for decision making during their last year of clinical training. However, scientific evidence was considered the most accurate and credible source instead of colleagues. The main barriers impeding EBN practice were revealed to be: not being able to find the required information, lack of time to search, and not feeling able to interpret information found. In the qualitative analysis of the interviews, three categories were identified: 'Towards EBN at a snail's pace'; 'A huge gap between theory and practice'; and 'Where is nursing?'

Conclusions: Although participants in this study consistently attributed more credibility to clinical guidelines, protocols, and scientific publications over colleagues, asking a colleague continues to be the main resource to address clinical doubts.

Lack of institutional support, the unresolved theory–practice gap in nursing, and the status of nurses in relation to other healthcare providers were identified as barriers for further EBN implementation.

Introduction

Evidence-based nursing (EBN), defined by [Ingersoll \(2000\)](#) as 'the conscientious, explicit and judicious use of theory-derived, research-based information in making decisions about care delivery to individuals or groups of patients and in consideration of individual needs and preferences' (p. 152) is essential for patient safety ([Horntvedt et al., 2018](#); [Ingersoll, 2000](#)). Consequently, in the last decade there has been an increasing interest in research focussed on interventions/strategies to promote and assess its implementation. Recent research findings show that registered nurses still struggle to incorporate EBN successfully in their daily practice ([Holopainen et al., 2019](#); [Warren et al., 2016](#)).

Among the barriers identified, a recent review found that nurses lacked knowledge on how or where to seek information and, as a consequence, more than 50% retrieved information from Google, or

used peers as a source of information instead of bibliographic databases ([Alving et al., 2018](#)). Other barriers stated in the literature are lack of organisational support, lack of knowledge for evidence evaluation, work overload, and resistance to change of practice ([Camargo et al., 2018](#); [Clarke et al., 2021](#); [Melnik et al., 2018](#); [Saunders et al., 2019](#); [Warren et al., 2016](#)).

In order to address these issues and give a definitive boost to EBN, universities, which are responsible for the training of new nurses, can become key actors. Acknowledging this, many universities worldwide have incorporated core competencies into their nursing education curricula that enable EBN. To ensure acquisition of these competencies, a variety of strategies and methods are being used to teach EBN, and to enhance nursing students' ability to efficiently transfer current best evidence to nursing practice. Gamification, peer teaching, and problem-based learning are some of the methods/strategies under study for this

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<https://doi.org/10.1016/j.profnurs.2022.03.008>

Received 1 October 2021; Received in revised form 14 March 2022; Accepted 22 March 2022

Available online 30 March 2022

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purpose, and have achieved varied results (Horntvedt et al., 2018; Rojjanasrirat & Rice, 2017; Sbaffi et al., 2018). Although available research has shown promising results with a variety of these strategies, most of them were still pilot studies, and therefore, the strategy/method that can best be scaled up effectively to teach EBN remains uncertain.

Since 2008, in Spain, where the present study took place, the completion of a four-year bachelor's degree at University College has been required to graduate as a nurse. This is a result of the adaptation to the European Higher Education Area during the Bologna Process (Estrada-Masllorens et al., 2016), which led to a profound restructuring of the nursing curricula, thus driving a shift in nursing education from being more practice-oriented to becoming more academic and research oriented. At this point, EBN was officially incorporated as a compulsory competence that nurses must achieve to graduate (Estrada-Masllorens et al., 2016). This study was conducted in a nursing degree where EBN was mainly incorporated as a cross-cutting issue, meaning that, although topics such as access and retrieval of scientific publications have a specific place in two first-year subjects, the aim has been to incorporate an EBN approach in all the subjects included in the training programme. In the final year, students must demonstrate their ability to identify, retrieve, and analyse scientific papers in their bachelor thesis.

Despite the fact that there are recommendations to embed EBN training across the whole curriculum in order to ensure students achieve the necessary competences to implement EBN (Malik et al., 2018), available literature focusses almost exclusively on the impact evaluation of specific teaching interventions or courses, in order to promote EBN (Keiffer, 2018; Oh & Yang, 2019; Sin & Bliquez, 2017; Wakibi et al., 2021). There is a paucity of knowledge about the effect that the overall incorporation of EBN as a cross-cutting approach on the whole nursing curricula might have in students' preparedness to implement EBN, as well as about how nurses perceive this type of EBN integration. This study aims to fill this gap by exploring the perceptions of final year student nurses about their preparation for EBN practice and current implementation of EBN in the local healthcare system through a sequential mixed methods study in a setting where EBN has been incorporated as an embedded approach in nursing curriculum.

Methods

Study design

This study followed a sequential mixed methods approach as described by Tariq and Woodman (Tariq & Woodman, 2013).

Participants

The inclusion criteria to participate in the study was being enrolled in the fourth year of the nursing baccalaureate either in May 2019 or May 2020, when the two recruitment processes took place. All fourth-year students were invited through an email, sent to their university email account, to complete a self-administered online questionnaire, and to participate in an individual interview held at the university facilities at the time and day that was most convenient for students. A total of 137 out of 340 student nurses answered the online questionnaire (40.2%) and 13 individual interviews were conducted. No exclusion criteria were identified as relevant, and therefore all students willing to participate in the study took part.

Two measures were implemented in order to ensure students' free participation in the study, and to avoid the fear of negative consequences as a result of rejection to participate. First, the recruitment was conducted once the academic relationship with the lecturers involved in the study had finished, namely they were no longer teaching any subject to this group of students, and were not responsible for grading them. Second, the questionnaire was anonymous, and was developed and completed in an online site external to the university, so the researchers were prevented from knowing which students had answered and which

hadn't.

Instruments

The questionnaire was specifically developed for this study, and comprised eight questions: three related to general socio-demographic background and five focussed on how final year student nurses resolved doubts arising during their nursing practice in their clinical placements. The questions were elaborated ad hoc for this research study based on the most commonly identified barriers for EBN implementation in the literature (Alving et al., 2018; Camargo et al., 2018; Warren et al., 2016) and the experiences of two of the researchers who had been teaching on the nursing baccalaureate for more than ten years each.

The interview guide consisted of open-ended questions that focussed on gaining a better understanding of the pitfalls and strengths of the current curricula in relation to EBN. Questions included in the interview guided were: how do you value the training received during your university studies; what strengths/pitfalls would you highlight; during your placements when you had a doubt about any nursing procedure or concern how did you address it; in order to address uncertainties or doubts which resources have you seen in the different hospitals and wards you have been to (for example: access to protocols/guidelines, access to databases, etc.); what is your perception of the extent to which EBN has been implemented in the services you have been involved in during your clinical placements; what is your perception of the training you have received in EBN during the baccalaureate.

Data collection

Both quantitative and qualitative data were collected from students who graduated in two different years (165 students in 2019 and 175 in 2020). Data collection took place during May and June of 2019 and 2020, respectively, for each group of students. The data collection method used for the quantitative data was a self-administered online questionnaire distributed through external to the university web sites. The data collection method used for the qualitative data was individual in-depth interviews. All the interviews were conducted by AM and IE; these were digitally recorded and transcribed by the same two researchers. The longest interview lasted 59 min and the shortest was 26 min.

Data analysis

Quantitative results were analysed with descriptive statistical methods (i.e. frequency and percentage) using the Statistical Package for Social Sciences Statistics for Windows version 26.

For qualitative results, all interviews were transcribed verbatim and analysed following the qualitative content analysis procedure as described by Graneheim and Lundman (Graneheim & Lundman, 2004) with the aid of the Atlas.ti software version 9 (GmbH, Berlin, Germany). After reading each transcription thoroughly, the meaning units were condensed, abstracted, and labelled with a code. The resulting codes were then sorted, based on similarities and differences, into the three categories described in the results section. The tentative categories as well as the sorting of the codes were discussed by three researchers (AM, IE, and OR) until agreement was reached. Additionally, preliminary results were presented and discussed with two participants who had took part in the interviews and questionnaire to assess their recognition of the findings. This analysis focussed on the manifest content of the text.

Ethical considerations

This study was approved by the Human Research Ethics Committee of the University of the Basque Country (UPV/EHU) (M10_2018_278MR1). The questionnaire was responded to

anonymously, and each participant in the qualitative part of the study was asked to provide written informed consent prior to conducting the interviews. Any personal information that could identify the respondents was eliminated from quotations to ensure confidentiality.

Results

With regards to the quantitative data, 84.7% of students who filled out the survey were female and 78.8% were in the age range of 22–23 years (Table 1). 97.1% of the participants stated that they had experienced doubts about nursing interventions during their last year of clinical training. When asked about how they had dealt with these doubts, 93.4% stated that they had asked a professional from the unit, while 62% consulted available protocols and 27.7% used evidence (guidelines, articles, books, etc.) However, when asked to assess the accuracy and credibility of different information sources, evidence (clinical guidelines, books, and articles) was rated with the highest score with a mean value of 4.77 points out of a maximum of 5, followed closely by the unit's protocols with a score 4.57 out of 5, while university lecturers and professionals from the unit obtained a mean of 3.87 and

Table 1
Survey questions and results. N = 137

	N(%)	Mean ± SD
Gender		
Female	116 (84.7)	
Male	20 (14.6)	
Non-binary	1 (0.7)	
Age (years)		
22–23	108 (78.8)	
24–29	19 (13.9)	
≥ 30	9 (6.6)	
Previous studies		
Secondary school	108 (78.8)	
Professional training	20 (14.6)	
University degree	7 (5.1)	
Secondary school + professional training	2 (1.5)	
Level of security to begin working as a nurse (1 = insecure; 10 = secure)		6.14 ± 1.61
Usefulness of the University training (1 = useless; 10 = useful)		6.45 ± 1.74
How have you addressed doubts when these arise in clinical practice? (multiple choice)		
Asking professionals from the unit	128 (93.4)	
Consulting unit protocol	85 (62)	
Evidence (guidelines, articles, books, etc.)	38 (27.7)	
Consulting college notes	36 (26.3)	
Asking classmates	37 (27)	
Asking university lecturers	4 (2.9)	
How reliable are each of these information sources? (1 = not reliable at all; 3 = reliable; 5 = very reliable)		
Evidence (guidelines, articles, book, etc.)		4.77 ± 0.53
Consulting unit protocol		4.57 ± 0.58
Asking university lecturers		3.87 ± 0.71
Asking professionals from the unit		3.80 ± 0.69
Consulting college notes		3.41 ± 0.79
Asking classmates		2.66 ± 0.68
What difficulties do you face when consulting evidence such as clinical practice guidelines, protocols, books, etc.? (multiple choice)		
Not being able to find the required information	57 (41.6)	
Lack of time	47 (34.3)	
Not being able to interpret the findings	44 (32.1)	
Unsure when applying the information found	37 (27)	
Not knowing where to search	30 (21.9)	

3.80, respectively. Finally, consulting college notes and asking classmates scored the lowest with a mean value of 3.41 and 2.66, respectively, though these sources were rarely consulted during clinical training. Not being able to find the required information was stated as being a barrier to the use of EBN by 41.6% of the respondents. Lack of time to search and not feeling able to interpret the information found were also frequently cited barriers, mentioned by 34.3% and 32.1%, respectively. Finally, not feeling sure of how to apply the information found, and not knowing where to search were stated as barriers by 27% and 21.9% of the participants, respectively (Table 1).

In relation to the qualitative data, three categories were identified: 'Towards EBN at a snail's pace'; 'A huge gap between theory and practice'; and 'Where is nursing'? The first category investigated the results gathered in the quantitative data, and provides an insight into – and examples of – the progress and challenges that need to be met for a more extensive implementation of EBN. The second and the third categories complement and enhance the quantitative results, shedding light on the possible causes both for this slow pace, and for the incongruence between what students identify as the most reliable sources of evidence and their practice.

Towards EBN at a snail's pace

In relation to the implementation of EBN in the public healthcare system, participants described a reality in nursing practice where EBN coexists with practice based on routine or inertia. In this sense, EBN was linked by participants to certain services/units, and individual and younger nurses, as can be seen in the examples that participants provided in the following quotations:

'I think new generations of nurses who [become involved with] health services, at least the majority, have a basic idea of what evidence is, and I hope we move forward.' Participant 11

'In a typical ward they say "we've always done this in this way". But in the service [where] I am now, they always look for the most updated knowledge.' Participant 4

'In the "at-home hospitalisation service", they valued evidence-based practice a lot, they did a lot of research and many training sessions.' Participant 7

When reflecting on the causes for the limited incorporation of EBN, in line with results from the quantitative data, the lack of time and confidence to adequately interpret and translate into practice the results indicated in scientific papers were identified by participants as reasons for not applying EBN among both experienced nurses and the students themselves.

(When asked about how she had dealt with a doubt during her practice) 'In google. I had no time. There is no time, then it's funny, consultations every five to ten minutes, so no. But that is not going to change.' Participant 3

'Ok, I'll search for that information, but do I have time to search for? Can I? That's the issue. Then, what we usually do is to ask the closer colleague "how do you do this?" And follow her advice.' Participant 12

Lack of individual motivation, along with a general lack of support from nurse supervisors, were also identified as barriers for a faster proliferation of EBN, as the following quotation exemplifies:

'There was a nurse who had been working there for twenty years and told [their] supervisor "sign me in for the course in nephrology" and she answered "and what do you want a course for if you've been

working here for 20 years and that's just theory?" and "well, to refresh my knowledge". But no.' Participant 5

Although participants perceived that new generations were better prepared to implement EBN, working experience involved a perceived hierarchy where being the 'new one' was a barrier to daring to question more experienced nurses.

'Because I've witnessed gross errors, so bad as to be unable to look at what they were doing and not being able to say anything because you are the student.' Participant 3

'And I was not going to be the smarty-pants and say "no, now you should..." because I am the new one.' Participant 8

A huge gap between theory and practice

This category is related to the struggles faced by both participants as nursing students and university lecturers themselves in order to close the gap between research-based knowledge and nursing practice.

In this sense, something that came out strongly during the interviews was a perceived total dissociation of what participants defined as 'theory' and 'practice'. In general, 'theory' was identified as everything taught at the University facilities, while 'practice' was linked overall with the clinical placements done during the nurses' years at university. Thus, although overall the participants valued the theoretical training they received as good, comprehensive, and appropriate, there was a shared perception of clinical placements being the essential component of their training, as the following quotations illustrate very well:

'I think theory is fine, because it encompasses everything, and more or less, you acquire a base, and you can manage.' Participant 4

'Obviously, what has enriched my training to become a professional, it's been the clinical placements.' Participant 5

'I think clinical placements is where we have learnt the most, more than here (the faculty). You learn by working, of course.' Participant 3

'What has given me more security, it's been the clinical placements, for example, I'm going to be a little bit rude, but if you take out the placements from this degree, you would go out (of the university) naked and with the clinical placements you go half naked (laughing).' Participant 8

Training received at the faculty was considered by participants to be too theoretical and missing a practical approach. In addition, some lecturers' teaching was described as outdated and as discouraging students from going beyond what was said in the classroom. Consequently, lectures were valued far less as contributors to the development of perceived confidence to begin working as nurses than seminars in which to practice nursing procedures, simulation exercises, or clinical case resolution exercises. Similarly, the training provided by lecturers who were nurses, and who based their lectures on their own working experience was considered as most useful for the students' training.

'There are teachers who did state their sources, or ... you could guess where it came from, but then there were other teachers who used a PowerPoint, or their notes from 2014 ... in 2020 now and well, used that.' Participant 11

'In relation with theory during the course, I did stick to what the lecturers said because in the end, even if I'd found something else,

what they're asking you (in the exams and assignments) is what they've given you.' Participant 13

Although training received on the clinical placements was so highly valued, participants were aware that its quality was strongly dependent on the nurses they were with during their shifts.

'Then within the clinical placement depends on the nurse you are with, that is, there are nurses who are super nice and explain everything and guide you through everything, and nurses who send you to measure blood pressures and do not want to know anything else about you. Then, it depends a lot on the person.' Participant 11

'Then I think lecturers believe we're going to be taught during the clinical placements, but the reality [is] it's not like that always. Because there are nurses and nurses. There are nurses who do things because they do, because they've always done it like this, but that doesn't justify [that] that's the best way of doing them. (...) I mean, learning is not guaranteed in the placements either.' Participant 10

Where is nursing?

This category investigates subtler barriers to the successful implementation of EBN. It includes codes that reflect the participants' perceptions of the lack of relevance of nursing science in the faculty, as well as in the clinical setting, in comparison with other health sciences. In the view of the participants, this lower consideration of nursing negatively influences the development of the profession of which EBN was seen as a key component.

First, added to the lack of practical approach described in the previous category, participants perceived that the nursing approach was blurred by a stronger medical approach in the theoretical training.

'I think the theoretical training that is given is fine, but it should be more linked to nursing, like "in this situation the nurse should do this", and not give so much information about a disease, what it is, that is very good, but not so much about symptoms' signs and such, and more of "if this happens, the nurse would have to notify, or this is what you have to look at".' Participant 1

'I've missed a little bit of knowledge about what a nurse does, that is, the real tasks she does, (...) not so much sign and so much symptom, (...) instead tell me more about complications, which is what you have to focus on as a nurse, I think.' Participant 5

'So, physiology is super important, but once you know the disease, you know how it works, you know its consequences, you know everything, what care do you give to that person?' Participant 12

Lack of consideration for nursing was perceived to begin in the faculty itself, as Participant 7 explains in the next quotation:

'Furthermore, it's something you can notice from the faculty, not just what you learn in the classes, but what happens out of the classes. For example, the classrooms distribution, where despite (nursing students) being the largest group, the classrooms located in the main aisle, which are biggest, are reserved for medical students; three quarters of the students' council representatives are from medicine while there are four degrees at this faculty and nursing students have no representation at the council, so we get the information late, and we have no participation, no space to give our opinion.' Participant 7

This also extended to clinical settings, where examples of poor interprofessional work and hierarchical relations were commonplace in the interviews.

'Between medicine and nursing badly. Where I have been not so bad, but there has been, for example, in the maternal ward to me it seemed that communication was zero. They visited patients and they didn't even tell you, and it's like how do you expect me to find out about the changes?' Participant 3

'nurses and physicians work together because they have to, sometimes, not always. You see that they get in touch only when they have to and sometimes badly and frequently in an unpleasant environment because there is no intention of doing group work.' Participant 7

In this study, the disregard of the nursing profession at different levels was perceived to hinder improvements in the profession, such as the implementation of EBN, as it demotivated nurses from doing research, applying research-based knowledge, and standing up for their profession.

'I feel that we lack that ambition, ambition, scientific ambition ... I think it also comes from the lack of motivation that is created, maybe also from the lack of demand.' Participant 1

'but in the hospital it's surprising that they (physicians) are the ones who tell you what to use when treating a wound, or sometimes you see that a treatment is working and they tell you to use another, when maybe it's going well with a cream but they want to change it immediately to something else. And not being able to have a say, I mean you can, but your opinion it isn't considered many times, it's what they say. End of story.' Participant 5

Discussion

This study aimed to explore the perceptions of final year student nurses with regard to their preparation for EBN practice and the current implementation of EBN in the local healthcare system.

One of the most relevant contributions of this study is that it supports the idea that, although experience-based nursing currently coexists with EBN in our healthcare system, new generations of nurses might tip the scales in EBN's favour in the future (González-Torrente et al., 2012; Martínez-Linares et al., 2019). Thus, participants in this study consistently attributed more credibility to clinical guidelines, protocols, and scientific publications than information provided by their colleagues.

However, there are still some barriers that might jeopardise this potential progress. First, despite the lower credibility attributed to colleagues, in line with previous research (Kumaran & Chipanshi, 2015), colleagues were mentioned by the majority of participants in this study as the chosen sources of information for resolving doubts. Also in accordance with previous research, one of the main reasons given by participants for not consulting clinical guidelines was a lack of knowledge of where or how to access these, showing that issues with evidence transmission inside healthcare settings are still occurring (Holopainen et al., 2019; Tanner et al., 2004; Wahoush & Banfield, 2014). Therefore, healthcare organisations' commitment to providing systematic communication of innovations and modifications in protocols and clinical guidelines is essential. In this sense, incorporation and promotion of new nursing roles as the leadership for advance practice nurses by healthcare organisations might be part of the solution (González-Torrente et al., 2012; Rodríguez Calero et al., 2019). Lack of time was the other main reason for not being able to search for the best answer. This implies that, despite the fact that almost all the participants stated having faced doubts about the nursing care they had to provide during the last year, searching, retrieving, and analysing research-based information is not regarded as part of the nurses' workload by management. Indeed, no time is allocated to this in daily practice. Furthering EBN implementation in the healthcare system requires an institutional and managerial

commitment (Clavijo-Chamorro et al., 2021; Melnyk et al., 2016) that should be reflected in giving nurses time and resources to perform the activities it requires, such as the search for, and analysis of, information.

Second, an unexpected and relevant finding of this research is that nursing continues to be perceived as a predominantly practical profession. This perception was reflected in our results by the participants' view of the gap between theory and practice, with a much higher value given to clinical placements over the training received at the university facilities, as well as the hierarchy they perceived that systematically places more experienced nurses over newly qualified ones, regardless of their training/knowledge. The theory–practice gap in nursing is a long-standing, classic issue, addressed in a vast number of papers in the field (Zieber & Wojtowicz, 2020). According to this and another recent study's results, this gap remains unresolved in our setting (Martínez-Linares et al., 2019). Recently defined by Greenway et al. (2019) as 'The gap between the theoretical knowledge and the practical application of nursing, most often expressed as a negative entity, with adverse consequences' (p.1), the theory–practice gap facilitates the perpetuation of routinised or ritualistic nursing practices in preference to EBN (Greenway, 2014). Based on the results of this study and previous research in the country, part of the responsibility for this gap falls on the nurse educators and the mentor nurses, who have taught outdated knowledge to students and failed to incorporate and apply recent advances and research findings to their curriculum or practice (Martínez-Linares et al., 2019). However, we suggest that in relation to the implementation of EBN, even more relevant than the theory–practice gap is the hierarchy participants perceived between these two dimensions whereby practice was considered better, by far. If sound scientific knowledge is not understood and valued as the basis of nursing practice by new generations, it seems unlikely that EBN will become mainstream in the near future. Interventions that aim to promote EBN should therefore necessarily take this into account, and incorporate strategies that have proven to be effective to help close this gap while challenging this perceived value. Further research is needed to assess whether the generation gap between lecturers and students described by other authors (Hart, 2017) is widening this theory–practice gap, and how this should be addressed regarding the implementation of EBN.

Finally, some authors have pointed out that EBN can raise nurses' status in the multi-professional teams and the nursing profession in general (Alving et al., 2018; Tod et al., 2004). The present study suggests that this relationship might also be working the other way round, and that the low status of nurses and the profession itself in relation to physicians might be hindering faster implementation of EBN. It may well be that a disregard of their work by other health professionals discourages nurses from raising the status of nursing practice through EBN. Consequently, relationships with other healthcare professionals, especially physicians, should be taken into account when doing research as well as when planning interventions in relation to nurses' motivation to implement EBN. Greater effort in national interprofessional education in health-related university studies (which at the moment is scarcely implemented) might help change this imbalance between physicians and nurses (Goldsberry, 2018).

Limitations of the study

Qualitative research studies should be as trustworthy as possible (Graneheim & Lundman, 2004). To enhance credibility, students from two different graduation years were invited to participate in the study in order to increase the variety of experiences of participants. Nevertheless, the number of students who decided to participate in the interviews was low, and students who did not take part might have recounted different experiences to those reflected in our results. This limitation of the study is compensated for by the mixed methods design and by the good response rate to the questionnaire. Furthermore, the triangulation of the results among the three researchers explained in the methodology was complemented with triangulation with some of the participants in the

interviews that had also answered the questionnaire, to assess their recognition of the findings.

With regard to transferability, we have tried to describe the context, as well as providing a detailed explanation of the research and analysis process to facilitate readers' consideration of the applicability of these results to their own settings.

Future research

A cohort study using validated measurement tools for EBN among nursing students that follows participants from their enrolment in the university until their initial years as registered nurses could better inform progression in EBN competence acquisition through the baccalaureate.

Implications for nursing education

Developing and evaluating teaching strategies aimed at closing the theory–practice gap in nursing education is urgent, not only for EBN teaching, but also for the scientific development of the profession.

Incorporation of interprofessional training programmes especially involving nursing and medical students at university level should be enhanced, as this has the potential to challenge hierarchical relations between both professions, and could enhance collaboration in professional life.

Conclusions

Although participants in this study attributed consistently more credibility to clinical guidelines, protocols, and scientific publications over colleagues, asking a colleague continues to be the main resource to address clinical doubts.

Lack of institutional support, the unresolved theory–practice gap in nursing, and the status of nurses in relation with other healthcare providers, were identified as barriers for further EBN implementation.

Funding

This study was supported by the University of the Basque Country, UPV-EHU (grant number PIE1920/79).

Declaration of competing interest

None.

Acknowledgments

The authors are very grateful to all the participants in the study for their willingness and generosity in sharing their experiences and perceptions.

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