

**Health for Public, Public  
for Health. Health systems  
in V4 countries**



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## **Evidence-Based Medicine and Evidence-Based Nursing Practice – knowledge and attitudes of nurses taking a state examination**

### **Background**

The awareness of benefits resulting from the use of the latest research findings in the professional practice of modern nurses is a prerequisite to ensuring safe nursing care satisfying the highest standards. Adequate decision-making in nursing care requires not only an adequate clinical diagnosis but also knowledge of scientific data and determination of the degree of their credibility. The aim of the study was to analyse the knowledge and attitudes of nurses with respect to Evidence-Based Medicine (EBM) and Evidence-Based Nursing Practice (EBNP).

### **Material and methods**

225 nurses taking a state examination organized by the Centre for Postgraduate Education of Nurses and Midwives in summer semester 2014 (6 male), mean age was 42 years (min. 26, max. 66, SD=8,45), mean length of service amounted to 16.5 years (min. 4, max. 35, SD=5.25). Standardized Evidence-Based Practice: 7 domains, 74 questions. Statistical analysis: STATISTICA version 10.

### **Results**

59,5% (n=134) was aware of EBP in their profession and its current development in Nursing (58,2%, n=131). Main barriers to implement EBM into practice is the access to the computer (38,2%, n=86), workload (37,7%, n=85) and a lack of time (35%, n=80). For 57,7% (n=130) literature and research findings were useful in their day-to-day work however in making decisions about professional work 39,5% value clinical/field experience more than scientific studies (n=89).

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## **Conclusions**

1. The questionnaire used to measure the level of knowledge and attitudes with respect to Evidence-based Nursing Practice among nurses was an efficient and reliable method.
2. The awareness of benefits resulting from using EBMP was high. The attitudes towards evidence-based nursing practice were positive, even though the supplementation of knowledge about EBNP is recommended.
3. It is necessary to expand the skills of nurses with reference to search for scientific evidence.

## **Introduction**

The use of scientific evidence in clinical practice has a beneficial impact not only on the safety of the very patient and medical personnel but also on the growth of the financial effectiveness and efficiency of medical procedures performed [1÷10]. Adequate decision-making in nursing care requires not only an adequate clinical diagnosis but also knowledge of scientific data and determination of the degree of their credibility. Hence the ever growing emphasis on the use of scientific research finding in the professional practice of nurses which is expected to have a favourable influence not only on the safety of the patient and the medical personnel or the effectiveness of the medical procedures performed but also on their financial effectiveness. A prerequisite is thus to make nurses aware of the necessity of using the latest scientific research findings and development of their skills and competence in the field of methodology of conducting scientific research [1÷10].

The idea of evidence-based medicine (EBM) was considered as a breakthrough in medicine. By the year 2000 appeared more than 200 major trials and 1500 articles and worked about 200 websites devoted to EBM [1]. The concept and Medicine Based on scientific evidence (evidence-based medicine - EBM) developed epidemiologists, clinicians from McMaster University in Hamilton (Canada). The same term was first used in 1991, Gordon Guyatt, a professor of medicine and clinical epidemiology in the material with information for doctors. The aim was to raise awareness on which scientific data is based on someone's practice and how much those data are reliable and what conclusions can be drawn from them. The concept of EBM was time "borrowed by other clinical areas such as nursing and as a result we can use the term Evidence-Based Practice (EBP) today

and its application in selected groups of specialists in health sciences, i.e. empirical verification of the assumptions and the results obtained.

A specialization block of postgraduate trainings comprises five modules and a general vocational block in a total of 1070 class hours and it aims to teach a nurse specific qualifications in nursing as well as acquisition of a title of specialist in this field. The general vocational classes that are the same for all fields of various specializations include also 15 hours of the "Research in Nursing" course that covers all issues associated with Evidence-Based Practice.

The dissemination of research activities in nursing and the development of the profession, knowledge and practice based on Evidence-based Nursing may contribute to the increase of the effectiveness and quality of provided health services. It is extremely important to append subjects related to Evidence-based Medicine, including the methodology of scientific research and critical analysis of the scientific literature in the educational programs in Nursing studies.

### **Aim**

The aim of the study was an analysis of the knowledge and attitudes of nursing taking a state examination towards practical practice based on scientific evidence and the application of the latest research finding in everyday clinical practice.

### **Material**

The study was conducted among a group of nurses taking the state examination after completing a specialist training in nursing organized by the Postgraduate Training Centre for Nurses and Midwives in summer semester in 2014. Correctly completed questionnaires were returned by 225 persons. 119 women and 6 men took part in the study. Mean age of the group amounted to 42 years (min. 26, max. 66, SD=8,45). The largest group (75 persons) had a Master's degree, 59 study participants had a medical secondary education, 33 with Bachelor's degree, 85 Master's degree and 2 graduated doctoral studies. 46 persons provided no answer to that question. As many as 95 study participants completed a postgraduate training (directly increasing their professional competencies), 42 nurses said that they had not graduated from such a course.

The largest subgroup among the study group had completed a qualifying course (25 nurses), 20 of the total graduated from a specialist course, 18 of the study group completed a specialist training (other), and 3 persons graduated from a retraining course. The length of service among the study participants amounted to 16.5 years (min. 4, max. 35, SD=5,25). 106 of the

nurses took employment in the public sector, 20 of the total worked in the private sector, and only two persons stated another form of employment. As many as 121 nurses were employed under a contract of employment (full-time), 4 persons worked under a contract of mandate and other 4 persons had another form of contract. The largest number of the study participants (67 persons) worked in town hospital departments and 23 persons worked in teaching hospital wards. Among the study group, five persons carried out functions related to management / supervision/ training/ teaching profession. The remaining persons were employed in an institute (6 nurses) and in a specialist outpatient clinic (3 nurses).

Among the study group, senior nurses constituted the largest subgroup (126 persons), followed by divisional nurses (22 persons), and departmental nurses (10 persons). Six persons coordinated and supervised the work of other nurses, three study participants worked as operating room nurses.

## **Methods**

In the study we used the diagnostic probe method, the questionnaire technique. The study was carried out in April 2014. We used the 'Evidence-Based Practice Profile Questionnaire developed by a team of authors: McEvoy MP, Williams MT, Olds TS. of the School of Health Sciences, University of South Australia, Adelaide, Australia, published in 2010 in the *Medical Education* journal [11]. The authors of the present study obtained the consent for its use. The questionnaire was validated and doubly translated by independent translators for the use in our own research. Participation in the study was voluntary and the questionnaire was anonymous.

The questionnaire consisted of 4 questions with the Likert scale or the nominal scale in the area of professional practice based on scientific evidence, 13 questions concerned personal information, education and employment and one question concerned an earlier encounter with the subject-matter discussed. Questions concerning evidence-based practice were divided into 7 subject domains:

1. Nurses' knowledge of and attitudes to EBP;
2. Nurses' relation to expanding their EPB competence;
3. EBP application in the professional nursing practice;
4. Knowledge of EBP terminology;
5. Frequency of the application of individual EBP elements in everyday clinical practice;
6. Level of EBP-related skills;

#### 7. Predispositions and barriers limiting the application of EBP by nurses.

The obtained data were gathered in Microsoft Excel Sheet 2010 (v14.0). STATISTICA version 10.0 statistical packet licensed by Medical University of Warsaw was used to perform an analysis of the data. to determine the degree of reliability of the questions based on the Likert scale we estimated the value of  $\alpha$ -Cronbach coefficient which serves to evaluate the internal compliance of measurement results.  $P < 0.05$  was adopted as the level of statistical significance for all analyses.

### Results

In the evaluation of the degree of reliability of the questions based on the Likert scale (domains 1, 3, 6 and 7; a total of 44 questions) the total level of the internal compliance of the measurement findings was high and amounted to  $\alpha = 0.867$ . A detailed analysis of reliability showed that in the case of Domain 3 the questions fell into two separate groups which cross-measured the same set of features and properties of the respondent. That is why this domain was divided into two sub-domains 3a and 3b.  $\alpha$  coefficient for domains based on Likert's scale alike was high:  $\alpha=0.892$ ,  $\alpha=0.806$ / $\alpha=0.927$ ,  $\alpha=0.686$ .

The first thematic domain aimed to assess the level of knowledge of and attitudes towards *Evidence – Based Practice* among nurses, rated by the respondents on a scale from 1 to 5, depending on the degree to which they agreed with a statement (1 – strongly disagree; 5 – strongly agree). 59,5% of nurses (100 persons) were aware of EBP in their profession and knew the meaning of the term of *Evidence - Based Practice* (121 persons).

In the following part of the questionnaire, the respondents expressed their attitude towards broadening their competencies related to EBP on a scale from 1 to 5 (1- certainly not, 5- certainly yes). The nurses expressed strong probability of improving their skills and knowledge related to EBP: as many as 117 nurses were going to use the best available scientific evidence to improve the quality of their professional practice and wanted to use relevant scientific literature to update their knowledge.

The questionnaire also concerned the use of EBP in professional practice of nurses and they were also assessed on a scale from 1 to 5 (1 – strongly disagree; 5 – strongly agree). Most nurses admitted that scientific information was useful in their professional practice (87 persons) and agreed that they should use scientific evidence in their daily work more often (113 persons). As many as 98 nurses were interested in improving skills necessary to include EBP in their professional practice.

Questions asked in the next part of the questionnaire aimed to assess the level of nurses' knowledge of research terminology. The terms and issues in the questionnaire were assessed on a scale from 1 to 5 (1 – never heard of it, 5 – I understand it and I can explain its meaning to others). Only 8 persons understood and were able to explain the term of the *statistical significance*. 56 nurses understood the term of the *systematic review* quite good, a little less of the total understood the terms of the *clinical relevance* (38) and *confidence interval* (33). 32 nurses had never heard about the term of the *forest plot*, and 49 nurses had never heard about the term of the *publication bias*.

In the following part of the questionnaire, the respondents assessed the frequency of using particular elements of *Evidence - Based Practice* in their everyday practice, using a scale from 1 to 5 (1 – never, 5 – every day). 46 persons have never critically appraised any literature that they have discovered to determine the methodological quality of the evidence. Details are presented in the following table 1.

Table 1. Frequency of the application by respondents of EBP elements in everyday professional practice.

		Never	Monthly or less	Fortnightly	Weekly	Daily
<i>In the past year how often have you:</i>						
1.	Formulated a clearly answerable question that defines the client or problem, the intervention and outcome(s) of interest	26 (11,55%)	46 (20,44%)	23 (10,22%)	31 (13,77%)	25 (11,11%)
2.	Tracked down the relevant evidence once you have formulated the question	40 (17,77%)	45 (20%)	16 (7,11%)	31 (13,77%)	16 (7,11%)
3.	Searched an electronic database	9 (4%)	44 (19,55%)	27 (12%)	36 (16%)	27 (12%)
4.	Critically appraised any literature you have discovered to determine the methodological quality	46 (20,44%)	34 (15,11%)	29 (12,88%)	32 (14,22%)	9 (4%)
5.	Integrated research evidence with your expertise	43 (19,11%)	48 (21,33%)	22 (9,77%)	30 (13,33%)	10 (4,44%)
6.	Considered your clients' preferences when making clinical/professional decisions	26 (11,55%)	34 (15,11%)	32 (14,22%)	30 (13,33%)	27 (12%)
7.	Read published research reports	34 (15,11%)	45 (20%)	25 (11,11%)	39 (17,33%)	15 (6,66%)
8.	Informally shared and discussed literature/research findings with others in your workplace	44 (19,55%)	60 (26,66%)	20 (8,88%)	31 (13,77%)	12 (5,33%)
9.	Formally shared and discussed literature/research findings with others in your department/practice (eg journal club, in-service presentation)	40 (17,77%)	39 (17,33%)	12 (5,33%)	23 (10,22%)	11 (4,88%)

Nurses were also asked to assess their skills related to *Evidence-Based Practice* on a scale from 1 to 5, with 1 referring to "I definitely cannot", and 5 meaning "I definitely can". Although 76 nurses said they could gain access to scientific evidence and use the electronic scientific literature databases (84 persons), as many as 89 nurses had no opinion on their research skills. Only 48 respondents said they could define the level of clinical usefulness of particular scientific evidence and 42 nurses had the ability to determine the level of its reliability.

The next part of the questionnaire concerned predispositions and barriers that limit the use of EBP in the nurses' workplace. 99 study participants expressed their willingness to learn new information, even though it was impossible for 85 nurses to update their knowledge on a regular basis due to the excessive workload. On the one hand, support from co-workers (63 nurses) and from management (70 nurses) constituted one of the greatest motivations to use *Evidence-Based Practice* in everyday professional practice. On the other hand, 60 study participants admitted that the costs of using information resources limited the use of EBP in everyday work. 42 nurses believed that their employer definitely did not require the use of EBP in their everyday professional practice.

In the last question nurses were asked to indicate whether and where they had met the term of the "*Evidence-Based Nursing Practice*." 76 respondents said that they met this term during one of the classes at university and 31 persons pointed to a conference or training. 16 respondents met the term of EBP in their workplace. 62 study participants had never heard about the *Evidence-Based Practice*.

## **Discussion**

In the available world literature PubMed, SCOPUS, EMBASE, PROQUEST, dates of search: 1 January 2000-12 – November 2013, language of publication: English; key words: *nursing, evidence-based practice, evidence-based nursing practice*) we found numerous publications dealing with opinions and attitudes of different groups of nurses on *evidence-based nursing practice* [1÷10].

What draws attention in the majority of the publications is the fact that the application of EBP presented concerns primarily everyday clinical practice or primary health care rather than programmes for the education of students of nursing [5÷10]. Nevertheless all publications emphasize the necessity of possibly earliest introduction of EBP issues in the programmes for the education of nurses [5÷25].

The present health care system requires highly qualified and well-trained nurses in palliative treatment. Attention paid to the quality of services provided by health care centres constitutes one of the greatest challenges for the modern health care system. The role of a nurse has changed with a development of a long-term care. A traditional nurse-oriented attitude in which a nurse was focused on securing and meeting the basic care needs has changed into an autonomous professional model.

A study by Rogala and Kozak-Szkopek enrolled a total of 60 nurses (Group 1 comprised nurses working in nursing and care facilities, Group 2 comprised nurses working in emergency departments, and Group 3 comprised students of nursing). The study results demonstrated that the level of knowledge of the study participants was diverse and it depended on clinical experience [12]. Our study shows that more than a half of the nurses participating in the study values professional experience more than the results from published studies and that clinical experience is the best way to assess the effectiveness of a particular activity.

Research conducted by Bernadette MazurekMelnyk among 160 nurses belonging to the American Nurses Association (ANA) describes the numerous benefits of using current medical knowledge in everyday clinical practice. However the level of knowledge of the subject is insufficient. The author also highlights the fact that in addition to assessing the skills by nurses about the critical analysis of scientific literature, the key should be to strengthen the faith of nurses that the professional practice based on scientific evidence is effective by lifelong learning and support from superiors [18]. This is also confirmed by Waters studies conducted in a group of 383 nurses in Australia where nurses were interested in the use of EBP in their everyday clinical practice but had a very low level of knowledge to independently implement current medical knowledge to their professional practice [20].

56.2% nurses said that they liked learning and they had management predispositions, and 37% of the total admitted that they were critical towards new ideas. As many as 31% of the respondents believed that in their job, the management was constantly looking for new possibilities of learning and 32% of the total said that support from management was one of the greatest motivations to use EBP in professional practice. The knowledge of nurses about the concepts associated with EBP was very low: only eight persons could explain the meaning of the terms of the *statistical significance* or *confidence interval*. The frequency of using particular elements of Evidence-Based Practice in everyday professional nursing practice was also very low: only 10% persons referred study results to their

own diagnosis once a week, and 38% of the total had never evaluated methodological soundness of the scientific literature they had been using.

The dynamic development and growth of competences in modern patient care require from specialists in health sciences, including nurses, permanent development of professional skills, gaining of new information and upgrading of their knowledge on an ongoing basis already in the course of their studies. Expansion of these nurses' knowledge of methodology of scientific research, critical analysis of its results or their ability to critically read scientific texts, that is all the key elements of *Evidence-Based Practice*, can have a significant impact not only on the development of competences of nurses and specialists in this field but also on the future development of the whole nursing as a science.

### Conclusions

1. The questionnaire used to measure the level of knowledge and attitudes with respect to *Evidence-based Nursing Practice* among nurses was an efficient and reliable method.
2. The awareness of benefits resulting from using EBMP was high. The attitudes towards evidence-based nursing practice were positive, even though the supplementation of knowledge about EBNP is recommended.
3. It is necessary to expand the skills of nurses with reference to search for scientific evidence.

### References

1. Gajewski P., Jaeschke R., Brożek J., *Podstawy EBM czyli medycyny opartej na danych naukowych dla lekarzy i studentów medycyny*, Medycyna Praktyczna, Kraków 2008, pp. 7-35
2. Williams A. B., *Praktyka pielęgnarska oparta na faktach*, Sztuka Pielęgowania 2013; 4 (8),pp. 14-15
3. Kędra E., *Praktyka pielęgnarska oparta na faktach – wymóg czy konieczność?*, Problemy Pielęgniarstwa 2011; 19 (3),pp. 391-395
4. Kózka M., *Zastosowanie badań naukowych w praktyce pielęgnarskiej*, Pielęgniarka Epidemiologiczna 2007; 2/3 (29/30), pp. 13-15
5. Adams S. Barron S., *Use of evidence-based practice in school nursing: Prevalence, associated variables, and perceived needs*, Worldviews on Evidence-Based Nursing 2009; 6 (1), pp. 16-26
6. Martin F., *Why we do what we do: Implementation of practice guidelines by family nurse practitioner students*, Journal of the American Academy of Nurse Practitioners 2008; 20(10), pp. 515-521

7. Aronson B. S., Rebesch L. M., Westrick-Killion S., *Enhancing Evidence Bases for Interventions in a Baccalaureate Program*, Nursing Education Perspectives 2007; 28 (5), pp. 257-262
8. Jalali-Nia S. F., Salsali M., Dehghan-Nayeri N., Ebadi A., *Effect of evidence-based education on Iranian nursing students' knowledge and attitude*, Nursing & Health Sciences 2011; 13 (2), pp. 221-227
9. Logan P. A., Angel L., *Nursing as a scientific undertaking and the intersection with science in undergraduate studies: implications for nursing management*, Journal of Nursing Management 2011; 9(3), pp. 407-417
10. Florin J. A., Ehrenberg A. B., Wallin L. A., Gustavsson P. C., *Educational support for research utilization and capability beliefs regarding evidence-based practice skills: A national survey of senior nursing students*, Journal of Advanced Nursing 2012; 68 (4), pp. 888-897
11. McEvoy M. P., Williams M. T., Olds T. S., *Evidence based practice profiles: Differences among allied health professions*, BMC Medical Education 2010, 10:69 doi:10.1186/1472-6920-10-69
12. Rogala J., Kozak-Szkopek E., *Wiedza pielęgniarek na temat problemów geriatrycznych*, Problemy Pielęgniarstwa 2012; 20 (3), pp. 338-345
13. Gijbels H., O'Connell R., Dalton-O'Connor C., *A systematic review evaluating the impact of postregistration nursing and midwifery education on practice*, Nurse Education in Practice 2010; 10(2), pp. 64-69
14. Thiel L., Ghosh Y., *Determining registered nurses' readiness for evidence-based practice*, Worldviews on Evidence-Based Nursing 2008; 5 (4), pp. 182-192
15. Chang S. C., Huang C. Y., Chen S. Y., Liao Y. C., *Evaluation of a Critical Appraisal Program for Clinical Nurses: A Controlled Before-and-After Study*, The Journal of Continuing Education in Nursing 2013; 44 (1), pp. 43-48
16. Majid S., Foo S., Luyt B., Zhang X., Theng Y., Chang Y., Mokhtar I. A., *Adopting evidence-based practice in clinical decision making: nurses' perceptions, knowledge, and barriers (EC)*, Journal of the Medical Library Association 2011; 99(3), pp. 229-236
17. Olade R. A., *Evidence-Based Practice and Research Utilization Activities Among Rural Nurses*, Journal of Nursing Scholarship 2004; 36 (3), pp. 220-225
18. Melnyk B. M., Fineout-Overholt E., Gallagher-Ford L., Kaplan L., *The state of evidence-based practice in US nurses: critical implications for nurse leaders and educators*, Journal of Nursing Administration 2012; 42 (9), pp. 410-417
19. Eizenberg M. M., *Implementation of evidence-based nursing practice: nurses' personal and professional factors?*, Journal of Advanced Nursing 2011; 67 (1), pp. 33-42
20. Waters D., Crisp J., Rychetnik L., Barratt A., *The Australian experience of nurses' preparedness for evidence-based practice*, Journal of Nursing Management 2009; 17(4), pp. 510-518
21. Pratt R. J., Pellowe C. M., Wilson J. A., *National Evidence-Based Guidelines for Preventing Healthcare – Associated Infections in NHS Hospitals in England*, Journal of Hospital Infection 2007; 65 Suppl. 1, pp. 551-564

22. Ferguson L., Day R., *Challenges for new nurses in evidence-based practice*, Journal of Nursing Management 2007; 15 (1), pp. 107-113
23. Morris J. A., Maynard V. B., *The value of an evidence based practice module to skill development*, Nurse Education Today 2007; 27 (6), pp. 534-541
24. Belowska J., Panczyk M., Zarzeka A., Żmuda-Trzebiatowska H., Kot-Doniec B., Gotlib J., *Wiedza i postawy pielęgniarek po ukończeniu szkolenia specjalizacyjnego z pielęgniarstwa epidemiologicznego wobec praktyki zawodowej opartej na dowodach naukowych – doniesienie wstępne*, Problemy Pielęgniarstwa 2015; 23 (2), pp. 150-159
25. Heydari A., Mazlom S., Ranjbar H., *A Study of Iranian Nurses' and Midwives' Knowledge, Attitudes, and Implementation of Evidence-Based Practice: The Time for Change Has Arrived*, Worldviews on Evidence-Based Nursing 2014; 11 (5), pp. 325-331