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**Evidence-Based Practice:
Knowledge, Attitudes, and Practices
of Midwives in Kazakhstan**

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Abstract <p>Despite numerous studies on evidence-based practice, knowledge of midwives and attitudes towards midwifery practice, many issues remain open, including evidence-based practice in obstetrics in the Republic of Kazakhstan. Therefore, it is necessary to study in depth the knowledge/skills, attitudes, and practice of midwifery based on evidence among midwives in the Republic of Kazakhstan.</p> <p>The aim of this research was to study midwives' knowledge/skills, practice, and attitudes towards evidence-based practice to get valuable information for the development of the quality of midwifery care in Kazakhstan.</p> <p>Quantitative cross-sectional research was used to describe the current state of evidence-based practice in Kazakhstan. The survey tool was the Evidence-Based Practice Questionnaire developed by Upton and Upton (2006) to assess Evidence-Based Practice knowledge, attitudes, and practices among midwives. In total, 304 practical midwives responded to the questionnaire between 2018 and 2019.</p> <p>The results show that the average level of evidence-based practice was 2.4, attitudes towards EBP 2.94, knowledge/skills in relation to evidence-based practice 2.74 and showed a very low result. Similarly low results were found in all groups for perceptions, attitudes, and knowledge in relation to evidence-based practice. All activities related to the practice of the evidence-based approach were rated as important. Understanding the concept and introducing evidence-based practice are necessary competencies in nursing education, not only for students, but also for teachers. More targeted research is needed related to the introduction of a scientifically based approach to nursing education, nursing practice and management in Kazakhstan.</p>		
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1 Introduction

In the strategy "Kazakhstan-2050: the new political course of the state"(2012), President Nursultan Nazarbayev of the Republic of Kazakhstan set the strategic goals to further develop the country and to enter on the list of the 30 most developed countries of the world by 2050. To achieve these goals, it is necessary to overcome the development gap between Kazakhstan and the OECD (Organisation for Economic Cooperation and Development) countries. The implementation of the programs provides for the division of responsibility for health protection between the state and the individual, transition to international principles of organization of medical care, and health promotion (Strategy "Kazakhstan-2050": new political course of the established state, 2012).

Currently, there are business relations between the Republic of Kazakhstan and WHO. Since 1992, when the Republic of Kazakhstan entered the World Health Organization and became its 180th member state (Event calendar, 1992, 01), the country has undergone significant health care reforms. Owing to the fact that a priority national task is to protect the health of mother and child, in January 2008, Kazakhstan passed international criteria for assessing live birth and stillbirth, which were recommended by WHO and UNICEF (The order of the Prime Minister of the Republic of Kazakhstan No. 38-R. 2006).

With an increase in population growth, there is a need to introduce new approaches to the treatment, prevention, and rehabilitation of patients, which brings new demands on the level of training and competencies of health workers. Specifically, since the modernization of the health system of the Republic of Kazakhstan began with nursing services in the European model, the special role of midwives in providing maternity and perinatal health care should be noted. (Order of the Minister of Health of the Republic of Kazakhstan dated July 27, 2018 No. 461. On approval of the main directions of development of primary health care in the Republic of Kazakhstan for 2018-2022)

Furthermore, the Ministry of Health of the Republic of Kazakhstan is implementing the project "Modernization of medical education and science", as well as a pilot project to develop and implement a new model of nursing service in practical health care

organizations. This project started in August 2017, and 7 high medical colleges and 29 pilot medical organizations of the Republic became its participants. The aim of the project is to introduce in medical organizations a new model of nursing service based on appropriate international requirements for the nursing profession, as well as the improvement of nursing care in the Republic of Kazakhstan

<http://dsm.gov.kz/ru/news/minzdrav-rk-v-kazahstane-vypushcheny-bolee-300-medsester-novoy-formacii>).

The lack of knowledge in the field of evidence-based practice of midwives is a serious medical and social problem leading to a decline in the quality of the maternity health care provided to the population, including a deterioration in maternal and infant morbidity and mortality. In this regard, ensuring the implementation of evidence-based practice, which involves the integration of all health services around the WHO program “Safe Motherhood”, is of particular relevance. The Republic of Kazakhstan adopted the WHO strategy "Safe motherhood" in 2008. The diagnostic and treatment protocols used in Kazakhstan are developed applying the requirements of safe motherhood and new perinatal technologies. (About the main measures to reduce maternal and infant mortality in Kazakhstan, 2014).

2 Evidence-Based Nursing Practice

2.1 Medical and social significance of evidence-based nursing practice

Evidence-based practice (EBP) is an approach that influences health care worldwide (Patelarou, Patelarou, Brokalaki, Dafermos, Thiel, Melas, & Koukia, 2013). Continuously growing requirements for the quality of knowledge, which are guided by nurse practitioners in their activities, is relevant all over the world. Scientific and evidence-based practice is a new approach, a direction in the technology of collecting, analyzing, summarizing, and interpreting scientific information (Titler, 2006). Knowledge of the basics of evidence-based practice, the development of skills that will allow us to critically evaluate medical information for rational use in further practical activities is the goal of a modern nurse and at the same time a great difficulty. This is the integration of the best scientific data with the clinical experience of the doctor/nurse and the values of the patient, as well as the conscientious, accurate, and meaningful

use of the best clinical research results for the treatment of a patient. (Lilienfeld, Ritschel, Lynn, Cautin & Latzman, 2013.)

Evidence-based practice (EBP) leads to improved quality of care, as well as to the individual and professional development of nurses and midwives (Meijers, Janssen, Cummings, Wallin, Estabrooks & Ralfens, 2006) and the reduction of health care costs (Barako, T.D., Chege, M., Wakasiaka, S., Omondi, L. 2012). The EBP provides valuable health care, including improving the quality and reliability of health services, improving health outcomes, and reducing the number of changes and costs (McGinty & Anderson, 2008). In this regard, a modern nurse should not only be informed about the latest medical technologies, but also to know why one or another method of treatment can be considered effective and safe.

In the area of health care in the developed countries, the nurse's activities came closer to the activities of the doctor, which led to a change in nursing patterns, an increase in the size of this professional group, a change in the nature and duration of vocational education, and raising in the social status of this category of medical personnel (Aggleton & Chalmers, 2000, 78). Scientific evidence suggests that about 30–40% of patients do not receive medical care according to existing scientific data and that about 20–30% of medical care is not required or even potentially harmful (Fischer, Lange, Klose, Greiner, Kraemer, 2016). A similar situation has arisen in nursing care (Wallin, Boström & Gustavsson, 2012). Therefore, health authorities around the world recommend that medical professionals base their decisions on scientific evidence. Since nurses and midwives are the largest group of health service personnel and play an important role in providing effective care to patients, their competence to use the results of scientific research in their daily practice has been emphasized as urgent (Kitson 2004).

Evidence-based medicine involves finding, comparing, summarizing, and widely disseminating evidence for use in the best interests of the patient (Evidence Based Medicine Working Group, 1993). This is an approach, direction or technology for collecting, analysing, summarizing and interpreting scientific information. Evidence-based medicine provides a conscientious, understandable, and common-sense use of the best modern advances in the treatment of each patient (Sackett, Rosenberg, Muir Gray, Haynes, Richardson, 1996). The main goal of the introduction of the principles of

evidence-based medicine in the practice of health care is to optimize the quality of medical care from the point of view of safety, efficiency, cost, and other significant factors (Masic, Miokovic, Muhamedagic, 2008). Evidence-based practice (EBP) leads to the individual and professional development of nurses and midwives, to improving the delivery and reliability of quality care (Meijers, Janssen, Cummings, Wallin, Estabrooks, & Ralfens, 2006), as well as reducing health care costs and improving patient outcomes (McGinty, & Anderson, 2008). Therefore, for today in the Republic of Kazakhstan, the nursing practice is actively introduced and develops based on evidence. (HE 08/01/2014)

2.2 The role of midwife in evidence-based practice

In every country of the world, nurses/midwives play an important role in national health care. The nursing/midwife profession faces a growing number of medical problems, such as an increase in fertility, an increase in the number of pregnant women over 40, higher rates of multiple births and cesarean sections, and social factors such as poverty and immigration (Bremnes, Wiig, Abeid, Darj, 2018).

The fact of a shortage of midwives and the increasing age structure of midwives means that the profession faces a shortage of personnel, so training and retaining them are priorities for obstetrics (ROYAL COLLEGE OF MIDWIVES, RCM, 2015). Many studies have shown that the current care culture, nurses' beliefs, and lack of motivation to change their habits are factors that preclude the introduction of EBP. Many nurses do not worry about whether their usual practice is the best practice. When nurses were asked where they had found answers to questions arising in their daily practice, many answered that they had no questions or that they asked the doctor. (Young, 2003.) Currently, nurses/midwives assist patients in terms of their own experience and knowledge from textbooks, but due to the increase in internal and external expectations of a higher quality of nursing care, this is no longer acceptable (Abbott, McSherry & Simmons, 2016).

Unfortunately, many nurses / midwives do not understand the concept of nursing based on evidence in clinical practice and how to apply this concept to general practice (Krugman, 2003). Therefore, it is necessary for clinical nurses/midwives to find the best

results of scientific research based on evidence-based medicine, to extract data from the experience of nurses and consider the patient's preferences in order to make a professional decision (Zhou, Hao, Guo, Liu, 2016).

2.3 Implementation of EBP

In the daily practice of a nurse/midwife, the implementation of EBP is complex (Hudson, Duke, Haas, Varnell, 2008). A study by Mohsen, Safaan, and Okby (2016) showed that 60% of practical nurses do not use the results of research in patient care procedures. As research shows, one of the main problems hampering the introduction of evidence-based medical practice is the lack of time (Mohsen, Safaan, Okby, 2016). Nurses believe that they are too busy to participate in evidence-based nursing activities (McSherry, & Artley, & Holloran, 2006). Also, nurses indicate that they lack the knowledge and competence to evaluate and analyze scientific data (McSherry et al, 2006). A study by Majid, Foo, Luyt, Zhang, Theng, Chang, and Intan (2011), showed that many nurses do not understand statistical terms and jargon used in research articles. Nurses do not have the principles of critical evaluation of publications and are intimidated by the difficulty of mastering such skills (Majid , Foo , Luyt , Zhang , Theng , Chang , Mokhtar, 2011).

Therefore, evidence-based nursing care requires additional training and education of nurses. Clinical nurses need continuous educational programs to enhance research and evaluation competencies. These skills are necessary for their clinical practice. (Krugman, 2003). show that for nursing based on evidence, additional training and nursing education is required. In order to expand the implementation of Evidence-based nursing it is necessary to improve organizational aspects in the form of empowerment of nurses. (Shafiei, Baratimarnani, Goharinezhad, Kalhor & Azmal 2014.) Graham, Logan, Harrison, Straus, Tetroe, Caswell, and Robinson (2006) describe EBP as two categories: the use of knowledge (the use of evidence underlying the practice, that is, behavioral change) and its impact (the result of using this knowledge, the patient's outcome, improvement, efficiency improvement, and cost-effectiveness of medical care). In terms of assessing the success of EBP, this is the impact on the clinical outcome, the difference in the use of health resources, or the change in individual, evidence-based behavior (Graham, Logan, Harrison, Straus, Tetroe, Caswell,

& Robinson, 2006). A greater responsibility for evidence-based medical practice (EBP) lies with nurses/midwives, since nurses/midwives are professionally responsible for caring for patients based on the best evidence available (Veeramah,2016).

Pravikoff, Pierce, and Tanner (2003) drew attention to the fact that nurses usually used information from their colleagues as the main source of information, and the library and research were used as the last facilities. McCaughan, Thompson, Cullum, Sheldon, and Thompson (2002) called this cultural resistance to change, where apathy and inaction appear instead of active resistance. Another problem that arises in clinical settings is the lack of resources (limited access to literature and the Internet) to search for new knowledge (Ervin 2002). The study by Cheung, Zhang, Mander, Xu, and Wang (2011) showed a fundamental problem in Chinese midwifery education, since midwives do not have access to materials based on evidence.

Despite the growing volume of information sources, the reality of obtaining high-quality scientific evidence in practice remains problematic (McSherry, et al. 2006).

An evidence-based approach can only become a reality if nurses have access to current scientific resources and the Internet near clinical conditions (Mohide & King 2003, 32). Evidence-based practice is the environment for changing professional and clinical practice, but this requires support from colleagues, managers, and management (McSherry et al. 2006).

To eliminate the factors that hamper the development of EBP, it is necessary for medical organizations to apply a structured and coordinated approach that allows nurses to practice using the evidence base (McSherry et al., 2006). Therefore, the organizational structures of the hospital to implement and strengthen EBP in patient care need to strengthen funding and development. Good outcome in the adoption of EBP is by involving a greater number of nurses to get a diploma and post-graduate education (Shafiei, Baratimarnani, Goharinezhad, Kalhor, Azmal, 2014). Evidence-based practice will soon become a reality when local health authorities and professional development programs will promote, support, and provide resources for its development in practice (McSherry et al, 2006).

2.4 Current midwifery practice: knowledge, views, and practices of EBP among clinical nurses and midwives

In order to determine the knowledge, views, and practices of EBP among clinical nurses and midwives, research has been carried out in many countries. In a study conducted at public hospitals in Mashhad in Iran, most nurses reported low knowledge or skills and practices of EBP. The study found that nurses reported higher knowledge, skills and practice of EBP than midwives. (Heydari, Mazlom, Ranjbar & Scurlock-Evans, 2014.) A study conducted by Malik, McKenna, and Plummer (2015) at Kenyatta National Hospital, Nairobi, Kenya showed that more than 92% of respondents agree that EBP is not widely used and is not taken into account in current practice (Barako, Chege, Wakasiaka, Omondi, 2012). A study conducted by Melnyk, Fineout-Overholt, Gallagher-Ford & Kaplan (2012) showed that only 34.5% of nurses reported that their colleagues had implemented EBP in caring for patients, 46.4% of respondents believe that EBP is regularly used in their institution, 76.2% of respondents reported the need for additional EBP knowledge and skills, and 72.9% EBP training.

Many researchers indicate that the application of EBP knowledge increases with the level of education and varies in clinical specialty, which indicates that education and current professional practice have an impact on perception and familiarity with EBP (Carlone & Igbirieh, 2014). It was found that nurses and midwives with master's degrees demonstrated more EBP knowledge, skills and practices and more positive attitudes than nurses with bachelor's degrees (Heydari, Mazlom, Ranjbar & Scurlock-Evans, 2014).

Belowska, Panczyk, Zarzeka, Zmuda-Trzebiatowska, Kot-Doniec and Gotlib (2016) conducted a study on the knowledge, attitudes, and skills of using EBP among midwives after the completion of the specialized training organized by the Center for Postgraduate Education for Nurses and Midwives (CKPPiP). They found that 66.6% of midwives were aware of the importance and development of EBP in obstetrics and the benefits gained from the use of EBP, 37.5% of respondents never assessed the methodological validity of the scientific literature they used, 39.5% of all had never met the term "systematic review", 56.2% of respondents said they knew how to look

for information in electronic scientific literature databases, and 31.2% used them once a month.

The knowledge, attitudes, and practices of midwives regarding evidence-based practices in the prevention of mother-to-child transmission of HIV in a hospital in Malawi were studied. The results showed that nurses had average knowledge of evidence-based practice, the attitude was favorable, and the practice was very low. Some socio-demographic characteristics may affect the knowledge, attitudes and practices of the Respondent. In addition, the lack of resources and the lack and difficulty of access to scientific literature in nursing practice are an obstacle to the development of EBP. The authors found that mentoring, training, and access to literature can contribute to evidence-based practice. (Mulenga & Naidoo, 2017)

2.5 Current midwifery practice in Kazakhstan

In Kazakhstan, only one study was conducted, the purpose of which was to describe and compare the current status of EBP from the perspective of Kazakhstani nurses and nursing teachers. In particular, the goal was to obtain information about the awareness of nursing and nursing teachers about knowledge and attitudes towards EBP and to study the factors that influence the adoption of EBP in Kazakhstan (Heikkila, Hopia, Hasselberg, Tiittanen & Baighorzina, 2017).

It was found that the majority of respondents did not understand the definition and meaning of the EBP concept. The results of the research showed that only 5.7% of respondents understood EBP, only subjective and objective data of the patient—12.3% of respondents, as well as a combination of previous experience and research results 20.8% of respondents. More than one-third (36.8%) of nursing and nursing teachers felt that EBP is a combination of subjective and objective patient data, textbook information, previous medical experience, and research findings. A quarter (24.5%) of the respondents identified EBP as consisting of patient data, previous experience of medical workers, research results, and patient values/preferences. The main obstacles to the introduction of EBP were the lack of time, knowledge, skills, and means. For the development of EBP in midwives, the exchange of experience with methods of working with colleagues, raising questions in practice is crucial. And to do this, it is necessary

to develop critical thinking of midwives, which previously was not supported in nursing education. (Heikkila et al., 2017.)

2.6 Evaluation of EBP knowledge, attitudes and practices?

Studies on the distribution and implementation of EBP among health care providers have shown that only a few have been effective (Grimshaw, Thomas, MacLennan, Fraser, Ramsay, Vale, Whitty, Eccles, Matowe, Shirran, Wensing, Dijkstra, Donaldson, 2004). The implementation of EBP is complex, multifaceted and multilevel, and activities need to take into account the context and culture and promote use (Bick & Graham 2010). Evaluation of EBP's knowledge, attitudes, and attitudes in the field of nursing is an important issue. The most common tool for determining EBP knowledge, attitudes, and practices among clinical nurses and midwives are questionnaires/scales (Zhou, et al., 2016). The most well-known are the following questionnaires/scales:

The Evidence-Based Practice Questionnaire (EBPQ) was developed to collect information and opinions on the use of evidence-based practices among health professionals. The questionnaire consists of three scales (EBP, EBP ratio and EBP knowledge). (Upton & Upton 2006) EBPQ is a reliable and effective tool. EBPQ was used in 22 studies and 5 educational and training case studies around the world. Among these studies, 44% were conducted in the United States of America, 33% in Europe (only 2 in the United Kingdom) and 22% in other countries (Saudi Arabia, New Zealand, Australia, South Korea and China). (Upton, Psychol, Upton et al., 2014). This tool can be used to measure the implementation of EBP.

The EBP Belief Scale (Melnyk, & Fineout, Overholt, & Mays, 2008) includes two scales: 1) the EBP verification scale, which allows you to measure a person's beliefs about the value of EBP and the ability to implement it; and 2) the EBP implementation scale, which measures the extent to which EBP is implemented. Using this scale, it is possible to establish the extent of EBP implantation and its impact on clinician satisfaction and patient outcomes. Perceived evidence-based knowledge defines the nurses' understanding of the availability of sufficient knowledge, skills and access to resources for the implementation of evidence-based practice (Thiel & Ghosh 2008).The EBP

Capability Belief Scale reflects views on the possibilities for EBP (Wallin, Boström & Gustavsson 2012).

The EBP Competence Questionnaire (Ruzafa-Martinez, Lopez-Iborra, Moreno-Casbas, & Madrigal-Torres, 2013) assesses the level of self-esteem in EBP. Unlike other questionnaires, EBP assessments that examine primarily the conceptual understanding, EBP-COQ provides information on the impact of learning in three areas: attitudes, knowledge and skills. The tool is applicable to educational institutions, seminars, and on-line administration (Ruzafa-Martinez et al., 2013).

For nurses/midwives to be able to work based on evidence, they need to know how to implement, develop, and evaluate evidence-based practices. In most developed countries, EBP nurses' training has been transferred to universities and academic colleges where a nurse teaches thinking and using EBP. After graduation, focused on EBP, nurses will be able to search for research results, understand them and compare them with their clinical experience in practice ((Zhou, et al., 2016). This led to new problems, such as training lecturers and clinical nurses. It is crucial that trained EBP nurses meet and learn from a nurse who believes in the importance of critical thinking and uses the results of research in their daily work (Bjuresäter, Sebastian, Kulkarni & Athlin, 2018). Joanna Briggs Institute (JBI), founded in 1996, is the first and largest institution of EBP, focused mainly on nursing. So far, it has more than 70 organizations around the world (The Joanna Briggs Institute, 2016). Another organization of influence on EBP in nursing is the registered Ontario Nurses Association (RNAO). RNAO has developed more than 50 best practice recommendations, and each has been implemented in the clinical nursing work (Registered Nurses' Association of Ontario, 2016).

Increasing the professional qualifications and continuing self-education of nurses/midwives based on recent research results is a prerequisite for the provision of effective and safe medical services and care for pregnant women (Heikkila et al, 2017). After gaining independence, the Republic of Kazakhstan began to promote scientifically based medicine and develop new national guidelines. Despite the current health reforms, key components of Kazakhstan's health care system need to be improved (Katsaga, Kulzhanov, Karanikolos & RECHEL, 2012).

Also, in Kazakhstan there are significant changes in the higher education of nurses (HE 08/01/2014). In connection with the transition of Kazakh universities to higher education in accordance with the Bologna process (in 2011), there are still some problems. (Yergebekov & Temirbekova, 2012). To address these issues, Kazakhstan complies with the European directives in the training of nursing professionals at all levels to become one of the 30 most developed countries in the world by 2020. (Resolution of the government of the Republic of Kazakhstan No. 752, 2014), (Heikkila et al, 2017). Protecting the health of mothers and children is one of the most important and most difficult tasks facing the health care system of the Republic of Kazakhstan. The head of state Nursultan Nazarbayev defined the health of the mother and child as the main priority for the present and future development of the country. In the strategic documents and addresses to the people of Kazakhstan, the President pointed to the need to reduce maternal and infant mortality and increase the life expectancy of the population. (State program for health care development of the Republic of Kazakhstan "Densaulyk" for 2016-2019, 2015)

The Republic of Kazakhstan adopted the live and stillbirth criteria recommended by WHO in 2008, and international technologies based on evidence-based medicine were introduced into the system of obstetrics and childhood (The order of the Prime Minister of the Republic of Kazakhstan No. 38-R. 2006). Thanks to the adoption of sectoral and national programs, including the State Program "Salamaty Kazakhstan", effective organizational technologies have been implemented, such as the regionalization of perinatal care—the distribution of maternity hospitals in terms of providing technologies for caring for pregnant women and newborns (Salamatty Kazakhstan "for 2011-2015, 2010).

At present, in the health care system, nursing specialists remain the most important component, with significant human resources and real opportunities to meet society's health services. The entry of the Republic of Kazakhstan into the Bologna process dictates the need to bring the education system, professional standards, qualifications and positions in line with European directives, including nursing. On August 9, 2017, a pilot project initiated by the Ministry of Health of the Republic of Kazakhstan was launched to create a new system for managing nursing services in the health care organizations of the Republic of Kazakhstan. The aim of the pilot project is to develop

and implement a new model of nursing services based on the proper international requirements for the profession of nurses in organizations of practical public health—the clinical foundations of higher medical colleges. For the Republic of Kazakhstan, the development of the nursing care system means its development at all levels of education, quality control of education at the level of international standards, the introduction of the practice of the Institute of Nurses with various posts depending on the level of education. Along with the reform of nursing education, it is planned to introduce new mechanisms for the functioning of medical organizations with equal medical and nursing organizational structures, the introduction of a register of specialists in nursing and nursing documentation, the introduction of innovative medical technologies, the development of modern practice of nursing evidence, the fundamental and applied science of nursing, clear differentiation of functional duties between doctors and a nurse of different levels. (Comprehensive plan for the development of nursing in the Republic of Kazakhstan until 2020. 2014, 8.)

Currently, there are some problems and barriers in the development of nursing practice and nursing education in Kazakhstan. The problem of limited knowledge about the possibilities and barriers of EBP in nursing practice is relevant for the post-Soviet space. And this requires more research related to the introduction of a evidence-based approach to nursing education, nursing practice and management in Kazakhstan (Heikkila et al. 2017).

Thus, despite numerous studies on evidence-based practice (EBP) and knowledge of midwives and attitudes towards midwifery practice, many issues, including EBP in obstetrics in the Republic of Kazakhstan, remain open.

Therefore, it is necessary to study in depth the knowledge/skills, attitudes, and practice of midwifery based on evidence among midwives in the Republic of Kazakhstan. All this served as the basis for our study.

3 Purpose, objectives and research questions

The purpose of this research is to study midwives' knowledge/skills, practice, and attitudes towards Evidence-Based Midwifery Practice to get valuable information for the development of the quality of midwifery care in Kazakhstan.

Objectives of the study:

- To explore midwives' knowledge and practice of evidence-based practice
- To explore midwives' attitudes towards evidence-based practice

The research questions are:

- What are the perceptions of midwives' knowledge of evidence-based practice?
- What are the midwives' attitudes towards evidence-based practice?

4 Research methods

4.1 Research methods

Quantitative cross-sectional research was used to describe the current state of EBP in Kazakhstan. The first part includes the demographic data of the study participants. The age groups were divided into 30 years or less, and over 30 years. The higher education degree was divided into a nursing degree (college), academic bachelor and a master's degree, and the qualification was divided into certificate (0-3 years), second category (3-5 years), first category (5-10 years) and high category (10 years or more). The survey tool was the EBQ developed by Upton and Upton (2006) to assess EBP knowledge, attitudes and practices among nurses/midwives. The original questionnaire was translated into Kazakh and Russian using a standardized method of direct linguistic translation. EBQ is a 24-point scale consisting of three subscales: practices of EBP, knowledge/skills and attitudes towards EBP. The first subscale (practices of EBP) includes 6 subjects related to the practice of midwives. The second subscale measures the attitudes of nurses to EBP (4 points). The third subscale includes 14 items (Knowledge/skills). All answers on EBQ that were given on a 7-point Likert scale were presented as frequencies, percentages, averages, and standard deviations. Mean, standard deviations, and cross tables were used in the description of variables. Data analysis was performed using SPSS 25 and was conducted using descriptive and analytical statistics.

4.2 Ethical Approval

Permission to conduct the study was issued by a representative of the Ministry of Health and Social Development of the Republic of Kazakhstan. Permission to use EB PQ was received from the original authors. The survey was conducted after obtaining permission to conduct a survey from the administration of the Perinatal Centres in Kazakhstan. All participants were informed that their participation would be voluntary. They indicated their informed consent to participate in the study, filling out a questionnaire and their answers were anonymous. The identity of the respondents was not disclosed at any stage in the presentation of the results. Before the survey, the participants of the study (midwives) were given oral information about the goal, objectives, and research methods. The participants in the study took voluntary informed consent to conduct a survey in writing. Non-compliance with the principle of voluntary participation in this study was unacceptable. During the survey, the anonymity of the interviewed participants was guaranteed.

4.3 Validity and reliability

The alpha value of Cronbach was 0.964, and the subscale values ranged from 0.79 to 0.94. This is a confirmed questionnaire with $\alpha = 0.87$ Cronbach, which was widely used in previous studies to assess the knowledge and parameters of EBP in medical institutions (Brown et al, 2009; Rice et al, 2010; Upton & Upton, 2006). In the initial study of Upton and Upton, the reliability assessment was similar (Upton & Upon 2006).

5 Midwives' Knowledge, Attitudes and Practices towards Evidence-Based Practice

5.1 Social characteristics of midwives

The questionnaire was completed by 304 participants (Table 1). It was revealed that practical midwives under the age of 30 made up 72.7% of the respondents (n = 221), over 30 and older 27.3% (n = 83). At the time of the survey, the youngest midwife was 20 years old, the oldest was 58 years old, and the average age was 28.57 (Table 1).

Table 1. Background characteristics of the respondents (n = 304)

	Background variable	frequency	%
Age (n = 304) average 28.57	0–30 years	221	72.7
	> 30 years	83	27,3
Gender (n = 304)	Female	304	100
	Male	0	0
Degree (n = 304)	College	296	97,3
	Academic bachelor	8	2.7
	Magistracy	0	0
Current qualification category (n = 304)	Certificate of a specialist (0–3 years' experience)	136	44.7
	Second category (3–5 years' experience)	76	25
	First category (5–10 years' experience)	62	20.4
	Highest category (>10 years' experience)	30	9.9
An advanced training in the field of EBP (n = 304)	Yes	49	16.1
	No, I do not want to.	30	9.9
	No, but I would like to	225	74

In this study, the level of education of midwives was rated in third-level maternity hospitals. It was found that 97% (n = 296) of midwives graduated from college, and 3% (n = 8) graduated with an academic bachelor's degree, and none of them graduated from the magistracy (Table 1).

It was found that the highest qualification category of midwives, with more than 10 years of work experience, was 9.8% (n = 30). The largest number of respondents have a specialist certificate of 44.6% (n = 136), the second category (3–5 years of work experience) 24.9% (n = 76), and the first category (5–10 years) 2.03% (n = 62). Of these, 73.8% (n = 225) answered that they have no experience in advanced training, but they would like to pass. It should be noted that 9.8% of midwives (n = 30) do not want to have training in evidence-based practice. The remaining 16.1% (n = 49) had experience in evidence-based obstetric practice (Table 1).

5.2 Midwives' knowledge and skills in evidence-based practice

The midwives' knowledge and skills to practice evidence-based nursing were analysed and the following results were obtained. (See Table 2). The average scores of the total knowledge and skills of EBPQ ranged from 2.49 to 3.93, with a mean of 2.74 (SD =

1.45). The items' scores of 1 to 4 were combined and represented as negative items. The subscale of item "Research skills" and "IT skills" were the highest one with mean of 3.93 and 3.02 (SD = 2.2 and 1.46), and the negative rate of it was 90.8% and 85.2%. The lowest one was items "Knowledge of how to retrieve evidence" and "Converting your information needs into a research question" (mean = 2.49, SD = 1.3), and the negative rate of it were 92.5% and 92.1%. (See Table 5). It was found that items "Awareness of major information types and sources", "Ability to identify gaps in your professional practice", "Ability to analyse critically evidence against set standards", "Ability to determine how valid (close to the truth) the material is", "Ability to determine how useful (clinically applicable) the material is", "Ability to apply information to individual cases", "Dissemination of new ideas about care to colleagues" and "Ability to review your own practice" were at the same level with mean of ~2.6 (SD = 1.38 and 1.44), and the negative rate of it was 89.5 and 91.2%. Items "Monitoring and reviewing of practice skills" and "Sharing of ideas and information with colleagues" were at also the same level with mean of 2.7 (both SD = 1.4), and the negative rate of it was 89 and 90.4%. (See Table 3).

Thus, it can be concluded that knowledge and skills in the field of EBP midwives reported low levels of knowledge. Since the level of knowledge of using evidence-based practice among midwives who completed a specialization programme is clearly insufficient, knowledge and skills of midwives with respect to this issue need to be urgently supplemented.

Table 2. Midwives' knowledge and skills to practice evidence-based nursing (n = 304)

Item	1 Poor f(%)	2 f(%)	3 f(%)	4 f(%)	5 f(%)	6 f(%)	7 Best f(%)	Mean	SD
Research skills	38	52	87	25	5	11	86,28	3,93	2,2
	12.5	17.1	28.6	8.2	1.6	3.6	28.29		
IT skills	30	101	88	40	20	14	11	3,02	1,46
	9.9	33.2	28.9	13.2	6.6	4.6	3.6		
Monitoring and reviewing of practice skills	50	108	91	22	13	11	9	2,7	1,4
	16.4	35.5	29.9	7.2	4.3	3.6	3.0		
Converting your information needs into a research question	63	110	91	16	12	7	5	2,49	1,3
	20.7	36.2	29.9	5.3	3.9	2.3	1.6		
	52	113	91	20	10	9	9	2,63	1,4

Awareness of major information types and sources	17.1	37.2	29.9	6.6	3.3	3.0	3.0		
Ability to identify gaps in your professional practice	57	119	74	26	9	9	10	2,6	1,4
	18.8	39.1	24.3	8.6	3.0	3.0	3.3		
Knowledge of how to retrieve evidence	65	114	83	19	8	7	8	2,49	1,33
	21.4	37.5	27.3	6.3	2.6	2.3	2.6		
Ability to analyse critically evidence against set standards	65	107	85	17	11	14	5	2,55	1,38
	21.4	35.2	28.0	5.6	3.6	4.6	1.6		
Ability to determine how valid (close to the truth) the material is	68	95	92	22	8	8	11	2,59	1,43
	22.4	31.3	30.3	7.2	2.6	2.6	3.6		
Ability to determine how useful (clinically applicable) the material is	63	94	97	22	7	11	10	2,63	1,42
	20.7	30.9	31.9	7.2	2.3	3.6	3.3		
Ability to apply information to individual cases	54	112	90	18	12	6	12	2,63	1,406
	17.8	36.8	29.6	5.9	3.9	2.0	3.9		
Sharing of ideas and information with colleagues	46	100	105	24	6	11	12	2,75	1,412
	15.1	32.9	34.5	7.9	2.0	3.6	3.9		
Dissemination of new ideas about care to colleagues	51	106	100	19	9	8	11	2,66	1,38
	16.8	34.9	32.9	6.3	3.0	2.6	3.6		
Ability to review your own practice	54	107	89	22	10	11	11	2,68	1,44
	17.8	35.2	29.3	7.2	3.3	3.6	3.6		

5.3 Midwives' attitudes towards EBP

The subscale of attitudes was the same with mean of 2.94 (SD = 1.53). (See Table 4). The items' scores of 1 to 4 were combined and were presented as negative items. The lowest score and the most negative one for attitude was for the item "I stick to tried and trusted methods rather than changing to anything new". The mean score for this item was 2.77 out of 7, while the negative rate of it was 89.47%. And the highest score was for "I resent having my clinical practice questioned"; the mean score was 3.12 out of 7. It was also one of the most negative in attitude subscale, with 81.55% negative rate (Table 4). The workload of midwives was too great to keep up with all the new evidence in 87.17% of respondents with the mean score was 2.96 (SD = 1.46).

It was analysed that less than 20% of interviewed practicing midwives noted a positive attitude towards EBP. Only 12.83% respondents think that new evidence is so important

that they make the time in their work schedule and that evidence-based practice is fundamental to professional practice, 18.42% welcomed questions on their practice, 10.43% chose item “my practice has changed because of evidence I have found”.

Table 3. Midwives’ attitudes toward EBP (n = 304)

Item	Mean	SD	Range
My workload is too great for me to keep up to date with all the new evidence	2,96	1,462	
I resent having my clinical practice questioned	3,12	1,734	
Evidence-based practice is a waste of time	2,91	1,489	
I stick to tried and trusted methods rather than changing to anything new	2,77		

Table 4. Midwives’ attitudes toward EBP (n = 304).

	My workload is too great for me to keep up to date with all the new evidence		I resent having my clinical practice questioned		Evidence based practice is a waste of time		I stick to tried and trusted methods rather than changing to anything new	
1	54	17.76%	46	15.13%	44	14.47%	51	16.78%
2	60	19.74%	82	26.97%	90	29.61%	97	31.91%
3	102	33.55%	91	29.94%	97	31.91%	91	29.93%
4	49	16.12%	29	9.54%	34	11.18%	33	10.85%
5	21	6.91%	16	5.26%	15	4.93%	13	4.28%
6	7	2.3%	12	3.95%	10	3.29%	7	2.3%
7	11	3.62%	28	9.21%	14	4.61%	12	3.95%
	New evidence is so important that I make the time in my work schedule		I welcome questions on my practice		Evidence based practice is fundamental to professional practice		My practice has changed because of evidence I have found	
Average 2,94	2,96		3,12		2,91		2,77	

5.4 Midwifery practice in EBP

An analysis of the patient's care by midwives was carried out (EBPQ - Practice). The average scores of the total practice of EBPQ ranged from 2.2 to 2.5, with a mean of 2.43 (SD = 1.43). The items' scores of 1 to 4 were combined and represented as negative items. The subscale of item "Formulated a clearly answerable question as the beginning of the process towards filling this gap" was the highest one with mean of 2.55 (SD = 1.5), and the negative rate of it was 90.8%. The lowest one is item "Integrated the evidence you have found with your expertise" (mean = 2.2, SD = 1.38), and the negative rate of it was 91.5%. (See Table 2). It was also found that items "Evaluated the outcomes of your practice" and "Shared this information with colleagues" was at the same level with mean of 2.51 (SD = 1.49 and 1.57), and the negative rate of it was 88.5 and 89.5%. Items "Tracked down the relevant evidence once you have formulated the question" and "Critically appraised, against set criteria, any literature you have discovered" was at almost the same level with mean of 2.4 and 2.33 (both SD = 1.3), and the negative rate of it was 91.4 and 92.4%.

Table 5. Evidence-based practice during the past year in relation to an individual patient's care by midwives (n = 304)

Item	1 Never f (%)	2 f (%)	3 f (%)	4 f (%)	5 f (%)	6 f (%)	7 Fre- quently f (%)	Mean 2,43	SD 1,5
Formulated a clearly answerable question as the beginning of the process towards filling this gap	79	92	80	25	9	7	12	2,55	1,5
	26.0	30.3	26.3	8.2	3.0	2.3	4.0		
Tracked down the relevant evidence once you have formulated the question	65	138	63	12	12	5	9	2,4	1,33
	21.4	45.4	20.7	3.9	3.9	1.6	3.0		
Critically appraised, against set criteria, any literature you have discovered	84	112	69	16	12	7	4	2,33	1,3
	27.6	36.8	22.7	5.3	3.9	2.3	1.3		
Integrated the evidence you have found with your expertise	100	100	64	14	14	5	7	2,29	1,38
	32.9	32.9	21.1	4.6	4.6	1.6	2.3		
Evaluated the outcomes of your practice	82	100	72	15	16	9	10	2,51	1,49
	27.0	32.9	23.7	4.9	5.3	3.0	3.3		

Shared this information with colleagues	84	102	70	16	4	14	14	2,51	1,57
	27.6	33.6	23.0	5.3	1.3	4.6	4.6		

Discussion

The research was conducted only with employees of public hospitals; findings may therefore not be representative of non-governmental hospitals. Since 2008, the obstetric and gynaecological service has shifted to international standards of care for pregnant women, mothers, and puerperium (WHO program “Safe Motherhood”), therefore our midwives have practical skills of care according to diagnostic and treatment protocols. But the application of skills is used under the guidance of a doctor, as the protocols are common. This study showed a low level of knowledge/skills in the conduct and application of evidence-based obstetric practice in their daily work, but it should be noted that this problem is also relevant for other countries (Zhou et al., 2016) .

The average level of knowledge of practice in relation to obstetric evidence-based medicine was 2.4, attitudes towards obstetric evidence-based medicine 2.94, and the level of knowledge / skills in relation to obstetric evidence-based medicine 2.74. The average age of midwives of the Republic of Kazakhstan was 28.57 years, 97% of midwives graduated from college, 44.6% (n = 136) had a specialist certificate, 73.8% (n = 225) had no experience in advanced training in the field of evidence-based obstetric practice, but they wanted to finish.

7. CONCLUSIONS

Application of the principles of Evidence-Based Midwifery practice is an effective tool for improving the quality of medical services, reducing the risk of maternal and perinatal mortality and morbidity. This study showed that the lack of knowledge of evidence-based practices among midwives dictates the need to reform the system of nursing education and the organization of nursing/midwifery health service.

To do this, it is necessary to activate the exchange of midwives' experience of medical obstetric centres in different countries, to develop clinical protocols of midwifery care for midwives, based on evidence. The development, dissemination and implementation of midwifery care protocols are entrusted to the perinatal and research centres of the mother and child, involving senior and chief midwives, not just doctors.

Health-care providers need to ensure that midwives have access to evidence-based Midwifery practice literature, motivate midwives to critically evaluate and formulate questions using relevant modern principles, and follow clear recommendations that can be applied in practice through promotion.

The application of evidence-based recommendations by practical midwives of Kazakhstan will bring medical practice closer to international standards of care, making health care more qualitative, effective, and cost-effective.

It is recommended that the results of this study be used to compare attitudes and knowledge of evidence-based obstetric practices and serve as an indicator of progress in empowering nursing services.

It is advisable to re-evaluate within 2 years from the moment of implementation of the development strategy to conduct a comparative analysis to assess progress in achieving the goals.

Given that the vision of the new model of nursing service is aimed at bringing the national health system in line with the European model, the successful implementation of evidence-based practice in their nursing/midwifery practice will be of great importance in order to provide an opportunity to contribute to the development Kazakhstan Health.

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Appendix 1. Perinatal Centers of Kazakhstan

1. Perinatal center № 2, Astana
2. Perinatal center № 3, Astana
3. Center for Perinatology and Pediatric Cardiosurgery, Almaty
4. City Perinatal Center, Almaty
5. Kostanay Perinatal Center, Kostanay
6. The regional perinatal center, Karaganda
7. Perinatal Center, Kokshetau
8. The regional perinatal center, Taraz
9. The regional perinatal center, Shymkent
10. Perinatal Center, Semey
11. The regional perinatal center, Taldykorgan
12. Regional Perinatal Center, Petropavlovsk
13. Aktyubinsk Regional Perinatal Center, Aktobe
14. Aktau city perinatal center, Aktau
15. Atyrau regional perinatal center, Atyrau
16. The perinatal center of Ust-Kamenogorsk
17. Pavlodar regional perinatal center, Pavlodar
18. West Kazakhstan regional perinatal center, Uralsk

Appendix 2. Evidence Based Practice Questionnaire (EBPQ, Upton & P.M. Upton, 2005).

This questionnaire is designed to gather information and opinions on the use of evidence based practice amongst health professionals. There are no right or wrong answers for we are interested in *your* opinions and *your* own use of evidence in *your* practice.

1. Considering your practice in relation to an individual patient’s care over the *past* year, how often have you done the following in response to a gap in your knowledge (please *v* or *X*):

Formulated a clearly answerable question as the beginning of the process towards filling this gap:

Never **Frequently**

Tracked down the relevant evidence once you have formulated the question:

Never **Frequently**

Critically appraised, against set criteria, any literature you have discovered:

Never **Frequently**

Integrated the evidence you have found with your expertise:

Never **Frequently**

Evaluated the outcomes of your practice:

Never **Frequently**

Shared this information with colleagues:

Never **Frequently**

2. Please indicate (by *v* or *X*) where on the scale you would place yourself for each of the following pairs of statements:

My workload is too great for me to keep up to date with all the new evidence New evidence is so important that I make the time in my work schedule

I resent having my clinical practice questioned I welcome questions on my practice

Evidence based practice is a waste of time Evidence based practice is fundamental to professional practice

I stick to tried and trusted methods rather than changing to anything new My practice has changed because of evidence I have found

3. On a scale of 1 to 7 (with 7 being the best) how would you rate your:

Please circle one number for each statement							
	Poor						
	Best						
Research skills	1	2	3	4	5	6	7
IT skills	1	2	3	4	5	6	7
Monitoring and reviewing of practice skills	1	2	3	4	5	6	7
Converting your information needs into a research question	1	2	3	4	5	6	7
Awareness of major information types and sources	1	2	3	4	5	6	7
Ability to identify gaps in your professional practice	1	2	3	4	5	6	7
Knowledge of how to retrieve evidence	1	2	3	4	5	6	7
Ability to analyse critically evidence against set standards	1	2	3	4	5	6	7
Ability to determine how valid (close to the truth) the material is	1	2	3	4	5	6	7
Ability to determine how useful (clinically applicable) the material is	1	2	3	4	5	6	7
Ability to apply information to individual cases	1	2	3	4	5	6	7
Sharing of ideas and information with colleagues	1	2	3	4	5	6	7
Dissemination of new ideas about care to colleagues	1	2	3	4	5	6	7
Ability to review your own practice	1	2	3	4	5	6	7