



# Research priorities in Evidence-Based Nursing Care: A Delphi survey

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## ABSTRACT

**Introduction:** Determining the research priorities in Evidence-Based Nursing Care is considered as a regular method to provide the substantive information for developing the nursing science and taking evidence-based practical steps but such research is currently minimal. Therefore, a Delphi survey was conducted to determine the research priorities in Evidence-Based Nursing Care in the North of Iran.

**Methods:** A three-round Delphi study was conducted to identify research priorities in Evidence-Based Nursing Care. The study comprised of research nurses, who have attended a Research Methodology course and did have a published research. A Delphi expert panel consists of a group of credible experts within the field attending in consensus meetings to determine the nursing research top priorities. Open-ended questions were analyzed using thematic content analysis. Analysis of questionnaires 2 and 3 entailed an examination of the mean scores for each priority ranked on the five-point Likert scale.

**Results:** Round 1 had 42 themes across 174 topics, identified by analyzing the data. In Round 2, respondents ranked all themes and 30 themes were selected. Finally, in Round 3, the top five research priorities emerged as the followings: Assurance in health care, nurse-patient communication, pain management, taking care of the patients under mechanical ventilation and drug care.

**Conclusions:** Determining research priorities in the Evidence-Based Nursing Care would optimize the level of utilization of the results of the studies by nurses and subsequently could improve delivering of evidence-based nursing services; Prioritization will also help in directing resources to the essential research needs.

**Keywords:** Delphi survey; evidence-based nursing; needs assessment; nurses

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## INTRODUCTION

Providing high-quality care has been posed as a priority in the health-care system in the field of nursing services (1). In most countries, ranking and validation of hospitals are under the influence of the quality of nursing care (2). Thus, the nurses are



expected to provide the evidence-based quality care at the highest level of professional nursing standards; Hence, the importance of evidence-based nursing which integrates the findings of the outstanding studies into practical skills in order to deliver nursing services has been highlighted as a method to boost nursing-care standards (3). EBP allows nurses to make complex health-care decisions based on findings from rigorous research reports, clinical expertise, and patient perspectives (4). Furthermore, the evidence-based performance will be influential in promoting professionalism in nursing (5).

In recent years, evidence-based care originating from top studies has been emphasized by the health policy-makers as a reliable method to promote the standards in nursing care services (6). However, one of the main barriers to implement the findings of nursing studies in practice is the ambiguity in the field of research and care prioritizing and also lack of well-defined demand appraisal to determine the importance of research in the nursing practice (4,7).

Research prioritizing process and its effectiveness depends on accurate and coherent planning and utilizing specific methods among which, Delphi survey is the most common used techniques. This technique is a research approach to gain consensus using a series of questionnaires and the provision of feedback to participants. Based on the summarized results in each step, individuals again adjust and express their opinions. Finally, after reaching a consensus, the results are discussed in terms of a statistical report (usually mean or median) and are used for decision-making (8). The Delphi Survey was chosen as it is a recognized method for identifying and prioritizing views on a variety of topics. The method has been successful in identifying priorities in health research and has a strong track record in nursing. Delphi has been frequently focused on by nursing researchers for determining the research priorities, and it has resulted in more communication between the research subjects in nursing with the organization, consultant managers, policymakers, and the society that receives the service (9).

The results of the nursing studies show that, in addition to the educational and managerial issues, there are other important aspects in nursing such as evidence-based care which their respective priority should be investigated within the research

process (10,11). The studies show that the process of prioritizing nursing research is essential in building a knowledge base for nursing practice and to increase the effectiveness of patients' care (7,9).

Despite the importance of Evidenced-based Practice in nursing, the most studies have focused on research priorities in nursing (12-14) or research priorities for specialized nursing practice (15-17). The only study that investigated the research priorities in Evidence-Based Nursing Care was performed by French et al. in Hong Kong and it prioritized ten research subjects (18) Furthermore, despite the existence of many studies in Iran about evidence-based care in nursing (19,20), there are no available studies that specifically determines the research priorities in evidence-based care. Hence, the need for an evidence-based need assessment for nursing practice and a clear direction for clinical nursing research are paramount. The results obtained from these research topics can help provide substantive information for taking the evidence-based practical steps.

The aim of the study is to determine the priorities in Evidence-Based Nursing Care in research at Guilan University of Medical Sciences.

## METHODS

A Delphi survey was conducted in the teaching hospitals of the North of Iran between September 2016 and March 2017. The Delphi survey design was chosen as an appropriate design to capture clinical nurses' view of the most important and most urgent problems that need to be addressed. Therefore, the study used a purposive, organizational approach to recruitment, rather than only a small expert panel to facilitate engagement of nurses from across the North of Iran. The belief that a multi-dimensional observation could eventuate in a more accurate assessment of nurses' needs and potentially enhance their collaboration in promoting the perspective of research-based practice in nursing field, led to this decision by the research team whose (inclusion criteria) eligibility criteria were all nurses to have a bachelor's or higher degrees in nursing, with a history of either previous attendance in a Research Methodology course or having a published research, and also willingness to participate in the study. The expert panel ?! was selected based on their

capability to identify the research priorities relevant to evidenced-based nursing care. The Delphi expert panel consists of a group of credible academic experts in the field of evidence-based nursing who are interested in the topic and willing to participate in the entire survey analysis while being excluded from the actual survey itself.

It should be noted that evidence-based nursing experts participated in the expert panel for a consensus of nurses' opinions about priorities. To collect the data, the Delphi method, which is a research tool, was utilized to seek a consensus of opinions about a complex problem. The search for consensus occurs systematically, and the experts, also known as the judges, probe the information, as it is called propositions, collected by another researcher through previously designed template of questionnaire inclusive of the research problems and its objectives, in which synthesis is presented, addressing the main trends regarding the theme (21).

Data collected through the consensus method were processed in three stages as follows:

### **The first round**

The first round of the Delphi survey included a list of questions to obtain demographic and professional information, information on years of nursing experience, academic qualification, current role/job title, and collaborative experiences. The Delphi portion of the survey consisted of three open-ended questions; the participants were asked to mention the most significant issues in nursing practice that need to be addressed as a matter of priority in order to improve nursing practice or certain aspects of its respective field and perhaps could promote the quality of nursing. The questions used for the first round were:

- 1- what are the most common issues in nursing practice in your experience?
- 2- Which issues in nursing practice would possibly benefit from further inquiry?

Moreover, as number 3- which issues in nursing practice turn out as a priority for the inquiry; This research question was considered to operationalize the concept of evidence-based nursing practice without actually using the term. To distribute and collect the questionnaires, phone calls were made

to the nursing managers of all the hospitals. Then, the questionnaires of the first stage of Delphi were sent to the nursing managers in separate letters. Open-ended questions from questionnaire 1 were analyzed using thematic grouping. All statements were reviewed individually by two of the researchers, who then met to re-examine the priorities, and the consensus was reached on the themes. This identification of research priorities was used to identify patterns of priorities and to help structure the subsequent development of a research agenda. These themes and their most frequent occurring examples were then used to construct the subsequent questionnaires for Rounds II and III.

### **The second round**

This round of the survey aimed to produce the most representative list of thematic grouping by asking the participants to comment on the appropriateness of the grouping identified by the analysts and to make suggestions for renaming the grouping if necessary. In this round, participants may exclude, include, or alter ideas as well as generate grouping themes. The participants were also asked to give additional research grouping if they thought that there were any serious omissions. These groupings were then presented into the second round and participants were asked to rate the significance level of each of the grouping on a five-point Likert scale ranging from 1 (low importance) to 5 (high importance). In this round, the panelists determined the mean score for each of the groups ranked previously based on the 5-point Likert scale. The responses from Round 2 were used to create Round 3 of the survey.

### **The third round**

In Round 3, the aim was to reach a final consensus on the research priorities of this study. The third round was about the clarification of the ideas, in which similar ideas are grouped together as agreed by all participants. In this round, participants were asked to select from the list of thematic grouping; they chose five theme as the most important issues and ranked them in descending order of the priority (1 = high importance, 5 = low importance). In addition, in Round 3, the results of the second round were presented based on the mean scores

that the participants had given to the grouping. The final priorities were determined using the priorities selected by the highest mean of themes in Round 3. At this round, to achieve the highest possible agreement, the responses of the samples were reinvestigated with the consensus of the expert panel to address the themes with high importance. In the third round of surveys, the mean score of themes were used to determine research priorities.

### Ethical considerations

This study was approved by the Ethics Committee of Guilan University of Medical Sciences with the Ethical Code IR.GUMS.REC.1394.671. The study's purpose and the method in each round have been explained to the participants and their voluntary participation, and the rights to withdraw from the study at any round were the other ethical considerations that were carefully regarded. In this study, to preserve and protect the spiritual rights of the samples, we have avoided mentioning the specific titles and research subjects that could be an indicator of the individual opinions and comments and only the general thematic grouping of the research was determined.

## RESULTS

The first survey round was sent to participants and 511 of the 570 participants (89%) responded.

In the second round, 477 of the 511 participants (93%) responded. In the third round, the response rate was 91% ( $n = 430$ ). The demographic characteristics for participants in Rounds I, II, and III are presented in Table 1.

### First-round analysis

To eliminate a small proportion of irrelevant responses 3 researchers independently judged whether the responses specifically related to the research subject? The data were analyzed using thematic grouping. The thematic grouping can be understood as the process of clustering information related to the same theme in the same group using one or more features of the information. The importance of the grouping process is in supporting the analysis of large amount of data. It points out that the grouping contributes by reducing the number of alternatives as it offers some representative elements to be used in the process of alternative choices. Initial thematic grouping was made independently by two core researchers. The topics were reviewed and similar topics were grouped under major topics; more specific and minor topics were presented as subcategories of major topics. These minor topics were decided collectively using a constant comparative, iterative process between two researchers. The groupings were reviewed by three experts to ensure that they were accurately categorized using

**TABLE 1.** The demographic profile of the participants from Rounds I, II, and III

Characteristic	Round I $n=511$	Round II $n=477$	Round III $n=430$
Years of nursing experience			
110	125	114	109
11-20	307	296	271
21-30	79	67	50
Academic qualification			
Bachelor's degree	424	391	409
Master's degree or higher	87	86	21
Current role/job title			
Nursing service manager	19	15	14
Nurse supervisor	147	141	128
Head nurse	178	165	144
Staff nurse	167	156	144
Collaborative experiences			
Clinical training courses for nurses	50	50	50
Approved projects of academic research centers	17	17	17

an iterative process until consensus was reached. A total of 174 “needs” were received from the first round of the study and 42 thematic groupings were confirmed with the consensus of the expert panel. The consensus thematic grouping was utilized for the second-round data collection.

### Second-round analysis

In analyzing the findings of the second round, all suggestions for eliminating or adding groupings complied. The research team refined groupings accordingly. The mean and standard deviation of the groupings were calculated based on the score given to each of the groupings by the participants. Some of the 42 thematic grouping in the previous round were eliminated and some others were integrated. The list of research groupings was finally narrowed down to 30 items.

### Third-round analysis

Questionnaire 3 was then developed to reach a final consensus on the research priorities for Evidence-Based Nursing Care. In Round III, participants were presented with the same 30 items as Round II, together with the mean score of each research issue from the second questionnaire. Of the 30 items, participants ranked their top five research priorities from 1 to 5 (1 – high importance and 5 – low importance). Scores were then calculated twice. First by using descriptive statistics as the questions were ranked according to the percentage of elections each item received. In the second calculation, scores were weighted to reflect the ranking given by each participant.

In this final round, the responses collected regarding the determination of the importance of the research groupings in the Evidence-Based Nursing Care were analyzed and ranked according to the mean score of each grouping. The groupings with higher mean scores were prioritized. In total, the top five research priorities were selected as research priorities in evidence-based cares were a quality assurance in health care, nurse–patient communication, pain management, mechanical ventilation nursing care, and drug care. Table 2 shows the final ranking of the research priorities of Evidence-Based Nursing Care. Examples of suggested topics for each of these five priorities included:

- i. Quality assurance in health care: Patients’ satisfaction, patient safety, effectiveness of nursing practice, quality-of-care outcomes, highest quality.
- ii. Nurse–patient Communication: Patient-centered communication, effective communication with patients, relaying and interpreting information to the patient, effective communication skills, relaying bad news to the patient, delivering bad news to patients.
- iii. Pain management: Effective pain relief, active management to relieve pain, pain care pathway, non-pharmacological pain management, and management of chronic pain.
- iv. Mechanical ventilation nursing care: Quality patient-ventilator management, initiation and weaning of mechanical ventilation, critical care for the management of mechanical ventilation, safely maintain the ventilator-dependent patient, prolonged mechanical ventilation support.
- v. Drug care: Drug safety, effective medication management, medication errors, improve patient medication adherence, guideline on safe use of high alert medications.

## DISCUSSION

The findings of this research showed that the issue of quality assurance in health care is highly prioritized. Accordingly, Parlour and Slater (2014) have referred to the issue of quality assurance in nursing care as the first research priority in nursing (22). This topic is one of the subjects included in research priorities among others for nurses in Australia as studied by Wilson et al. (23). considering that providing good quality care has been proposed as a priority in the health-care system and since the ranking and accreditation of hospitals are influenced by the nursing care quality (24), therefore attending to this issue could be of paramount importance in enhancing the nurses’ motivation to select the quality assurance in nursing care as the research priority to be able to provide potential options for promoting the care and improving its quality.

The second priority in this study is consistent with the research priorities ensued from the study conducted by French et al. through utilizing Delphi Technique regarding evidence-based care in nursing. (18).

**TABLE 2.** The final ranking of the research priorities of the Evidence-Based Nursing Care based on Delphi survey

Importance level	Research priority	Mean	Standard deviation
1	Quality assurance in health care	4.75	0.57
2	Nurse-patient communication	4.55	0.78
3	Pain management	4.48	0.73
4	Mechanical ventilation nursing care	4.47	0.70
5	Drug care	4.46	0.75
6	Patients' quality of life	4.45	0.83
7	Infection control	4.43	0.70
8	Wound management	4.40	0.78
9	tracheostomy care	4.40	0.76
10	Post-operative care	4.37	0.78
11	Clinical exposures	4.35	0.82
12	Clinical decision-making	4.33	0.82
13	Patient education	4.32	0.81
14	Models of palliative care delivery	4.30	0.79
15	Self-management	4.31	0.82
16	Models of nursing care	4.30	0.82
17	Surgical drain care	4.29	0.75
18	Hemodynamic evaluation and monitoring	4.25	0.81
19	Endotracheal tube suction	4.24	0.89
20	Care in prolonged and complete immobility	4.22	0.86
21	Pressure sore management	4.20	0.73
22	Emergency preparedness for disaster	4.18	0.83
23	Symptom management	4.14	0.86
24	Psychological care	4.13	0.88
25	Patient rehabilitation	4.12	0.79
26	Documentation and legal issues	4.12	0.84
27	Patient adaption	4.07	0.88
28	Critical event management	4.06	0.86
29	Clinical competency	4.05	0.83
30	Ergonomics in nursing	4.00	0.92

Aulettae et al. have also proposed the necessity of research on nurses' interpersonal communication skills towards the patients as a research priority in the nursing field (25). Considering the diversity of communication methods, research on the nurse-patient interactions could enhance the nurses' knowledge regarding interpersonal skills and would help them to have better grasp on the patients' perceptions of the nurse-patient interaction.

Patient's pain management was also one of the important needs assessed in this study. This result is consistent with the needs obtained from the study of Blackwood et al. (26). Assessing symptoms and relieving pain in the patients are from the priorities

that have also been emphasized in the study of Lewandowski and Kositsky (27). Nurses, more than any other members of the care team, are required to understand the pain and patient's respective perception (of the pain), meanwhile skilled enough in full assessment and eventually relieving the patient's pain. hence, with regards to the importance of the evidence-based practice in the optimal management of pain and considering insufficient standard non-pharmacological protocol in pain control, more research-based evidence is required in the field of pain appraisal and management.

Mechanical ventilation nursing care was also an important topic analyzed in this study. Moradi

et al. (2013) who in their study tried to design an evidence-based care system for patients under mechanical ventilation have pointed to the necessity of high-quality and specific evidence-based instructions as an indispensable constituent of research in nursing field. According to previous evidence, standardizing of the nursing cares in the patients on mechanical ventilation will be followed by the best results in improving of nursing care quality. The lack of standardization of the existing instructions and their low quality in caring for the patients on mechanical ventilation indicate the necessity of designing the high-quality and specific evidence-based instructions (28). Therefore, the research evidence should be used to improve nursing care in these patients for controlling the effects of mechanical ventilation treatment.

Drug related care was the fourth priority obtained from the results of this study. This priority was consistent with the results achieved by Rowat et al. which was performed with the purpose of determining the research priorities using Delphi technique (13). Recognizing the issues related to drug care is a part of a care plan in which the drug problems of the patient and the expected outcomes are explained and measures to achieve it are planned. Granted role of nurses in dispensing the drugs to the patients, it seems that considerable attention should be paid to the clinical aspects of care including the drug care (29) as well as being addressed in the research and studies.

### Limitations

Decrease in response rate in three rounds of this study may be explained by a busy clinical workload and to some extent due to lack of time to complete the survey questionnaires. An alternative explanation may be that initial enthusiasm level diminished over time as a Delphi study could be slow and time-consuming. It is also acknowledged; this study was conducted in a busy teaching/referral hospital where provides the most of health-care services to patients in the North of Iran.

### CONCLUSIONS

The results obtained from this study identified and introduced the research priorities in the

evidence-based care of the nursing staffs at Guilan University of Medical Sciences. The determined priorities in the evidence-based cares could be considered as a research guide for the policymakers and Institutional Review Board and through principled planning it could direct researchers towards applied experiments based on the specified priorities and enables the optimal use of the studies' results for promoting the care skills in nurses.

We suggest the formation of a policy-making committee of the applicable studies under the responsibility of the Nursing Research Office of the Ministry of Health with the aim of identification of research needs and priorities as the best solution.

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### CONFLICTS OF INTEREST

There are no conflicts of interest.

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