

Co-funded by the
Erasmus+ Programme
of the European Union



ProInCa

**Promoting the Innovation Capacity of Higher Education in Nursing during
Health Services' Transition**

D2.3.2
**Report on recommendations to Medical Universities for
creation of nursing research agenda**

WP2.3 Establish HEI research program and networking in nursing



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06.11.2019

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Disclaimer:

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Summary

In order to support the development of nursing research strategy at medical universities in the Republic of Kazakhstan, recommendations for the topics of nursing research and actions for creation of university specific nursing research agendas were determined.

Recommendations are based on a three-stage Delphi study among Kazakh health care administrators, educators, and professionals with regards to nursing research topics now and in the future. In order to create the statements for the Delphi study, international and Kazakhstani view to current nursing research topics were combined. A systematic review on current nursing research topics based on international publications (n=91) was conducted, and 17 selected international policy and strategy documents of nursing and midwifery were analysed to find the most important topics and current trends in nursing research and nursing science worldwide. Furthermore, in order to identify the current situation of nursing research in Kazakhstan and find out the future nursing research topics, the focus group interviews were realised for 58 experts in six Kazakhstani cities and an analysis of Kazakhstan's healthcare development program was carried out. Based on the above-mentioned reviews and reports, a candidate set of 81 nursing research statements for a pilot study phase were designed. An online survey tool Webropol provided by JAMK University of Applied Sciences was developed for conducting the Delphi study.

The response rate of this Delphi study was 42.5 % (n= 65, round 1), 23.2 % (n=55, round 2) and 21.1 % (n=48, round 3). The total number of respondents was 168 of which most answered all three questionnaires. Regarding the characteristics of the respondents, it is noteworthy that in round 1, almost half of the respondents (49%) represented clinical practice, in round 2 almost third (27%), and in the last round 40 %. Regarding rounds 1, 2 and 3, 30%, 18% and 21%, respectively, of the respondents represent clinical practice.

Respondents are of the opinion that the three most important nursing research areas in terms of high priority are: 1) critical care nursing and emergency nursing, 2) stroke and heart failure nursing care, and 3) oncology nursing. Almost 80 % (range 71-77 %) of the respondents think that these areas need to be studied urgently. In addition, 67 % of the respondents rated that quality



improvement in nursing, professional development, and health promotion and disease prevention are the topics that need to be studied in nursing research within two years. Nursing education was also rated as an urgent study topic by 63% of the respondents.

For medium priority, 1) multidisciplinary and inter-professional collaboration in nursing science research, 2) seriously ill patients and their quality of life, and 3) patient outcomes and outcomes of nursing intervention research were rated as nursing fields and areas that need to be conducted and studied within the next two to four years. Nursing research topics that were rated as low priority (within 5-10 years) by Kazakhstani experts were 1) conducting experimental/intervention research and 2) developing strategies and models for nursing.

The following recommendations are offered for Medical universities to consider when designing actions to be taken in order to develop university specific nursing research agendas and nursing research in Kazakhstan.

1. To base the creation of nursing research strategy on the capacity analysis of faculty of university.
2. To collaborate with regional health care departments, hospitals and polyclinics to create a nursing research agenda that serves the development of health service in Kazakhstan.
3. To establish national research priorities between medical universities to create university specific nursing research agendas.
4. To offer research-based master and PhD education in nursing science.



1 Developing agreement by using Delphi study technique

The Delphi technique that was used involved three rounds of surveys to Kazakhstani healthcare experts from February to May 2019. A pilot study was implemented prior to the first Delphi study round. The Delphi technique is characterized as a series of surveys to obtain previously unknown opinions of a group of experts. The Delphi technique has been widely applied in a variety of nursing contexts particularly identifying research priorities (e.g., Cowman et al., 2012; Wynaden et al., 2014).

1.1 Selection of experts

Choosing appropriate experts for this Delphi study was important and therefore, a set of criteria for selection of the Kazakhstani experts were determined and applied. First, selected experts should have had understanding of the nursing research reform undergoing in Kazakhstan in order to able to foresee the development and importance of nursing research and science in Kazakhstan for the health care service development. Second, they ought to have had capacity and willingness to participate in different Delphi rounds. Thirdly, they should represent all regions of Kazakhstan to cover the different national needs and priorities. The number of experts required for this Delphi study was 618 altogether (excluding pilot round). The emails of possible experts were collected from Kazakhstani project participants and Karaganda Medical University representatives were contacting different stakeholder groups in order to get their personal emails and to motivate to answer to the different survey rounds. Several reminders to response the Delphi questionnaires were sent to selected experts regarding all three rounds in order to increase the response rate. Participants were representing one of the following stakeholder: policy and administration; education, teaching and academic world and clinical practice (hospitals and polyclinics).



2 Generating candidate statements

Nursing research topic statements regarding the three Delphi study rounds with the pilot study were created based on four different reviews and reports delivered by representatives from the Karaganda Medical University and JAMK University of Applied Sciences (Figure 1). The reviews and reports are briefly described here.

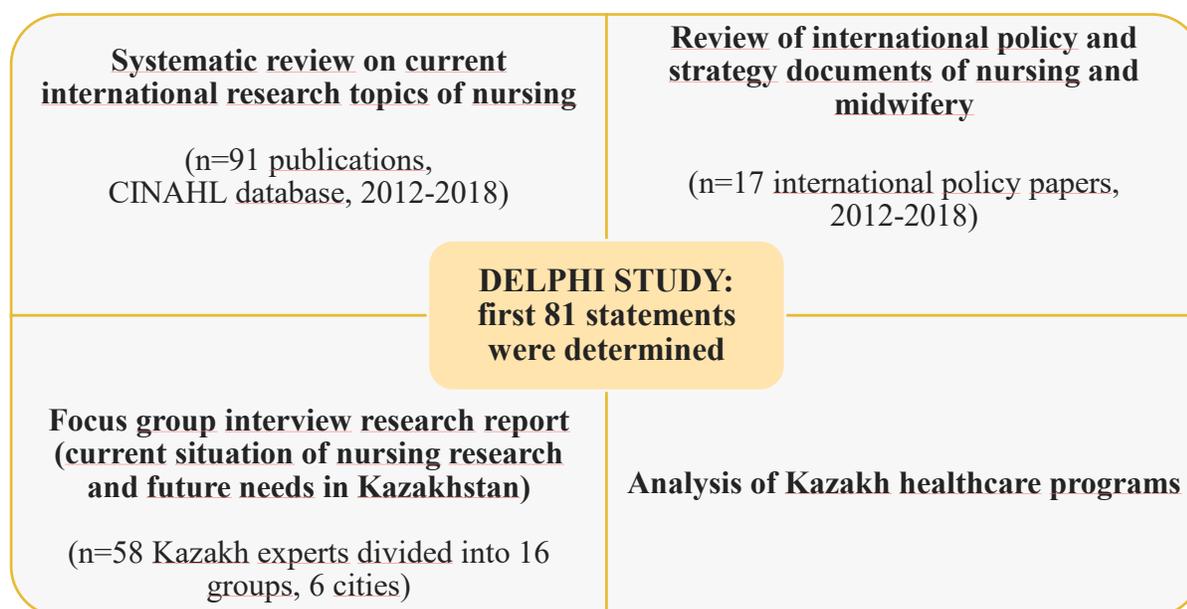


Figure 1. Delphi study based on four components

2.1 Systematic review on current international nursing research topics

A systematic literature review was conducted to identify global research priorities for nursing, and to provide a synthesis of current nursing research priorities for the Delphi study.

The CINAHL plus (EBSCO) with a Full Text database was used to search relevant literature between January 2012 and December 2018. Out of 1522 original publications, the review included 91 publications altogether. Following the screening for eligibility, two independent reviewers evaluated full-text publications for quality by using Joanna Briggs Institute's (JBI) Critical appraisal tools (2017). The data was analysed by using a thematic analysis. Four key theme areas for nursing research were identified: nursing theory development, methodology of nursing research, expertise in advanced nursing, and professional nursing practice.

2.2 Review of international policy and strategy documents of nursing and midwifery

Seventeen different international nursing and midwifery policy and strategy documents published 2012-2017 were reviewed. A thematic analysis was applied for the analysis of the selected documents. The following two questions were answered: what are the future trends in nursing and nursing research and what are the most important research areas in nursing research in future. Seven future trends and research areas in nursing and nursing research were discovered: 1) ageing of population, 2) self-management and self-care, 3) preventive healthcare, 4) personalized healthcare, 5) multidisciplinary and inter-professional collaboration, 6) educating and supporting nurses and midwives, and 7) big data and digital technology.

2.3 Report of focus group interview research

The aim of the focus group interview research was to identify the current situation of nursing research in Kazakhstan and, discover the main topics of nursing research in Kazakhstan in the future. A focus group interviews were conducted with 58 respondents divided into 16 groups in six cities across Kazakhstan: Nur-Sultan, Almaty, Aktobe, Karaganda, Semey and Shymkent. Two of the group interviews were held via Skype and the rest face-to-face in 2018. Findings indicated four different challenges: 1) nursing research is suffering from a lack of resources (no competent researchers, no support from practice), 2) nurse educators do not have nursing professional background, 3) the status of nursing profession in Kazakhstan is not clear and strong enough, and 4) nursing students in all levels are not motivated enough of nursing research. With respect to nursing research areas in the future, five topics were discovered: nursing practice, nursing education, primary health care, eHealth, and mental health nursing. All of the above-mentioned topics need to be studied more in nursing research according to focus group respondents.

2.4 An analysis of Kazakhstan's healthcare development program

The Kazakh healthcare programs were analysed and main results were defined.



2.5 Pilot phase

The pilot phase questionnaire contained 18 themes of nursing research topics with 81 statements altogether. The development of the questionnaire was based on the two reviews and two reports described in previous chapters. We distributed 12 questionnaires and of these, 11 were completed. The response rate was 91.7 %. Respondents provided comments and feedback concerning the given themes and its statements. Changes and modifications were made to the themes and statements based on respondents' feedback. Due to this pilot phase, we were interested in feedback on questionnaire and the online survey procedure by Webropol not the actual answers for the statements. The Delphi study process is illustrated in Figure 2.

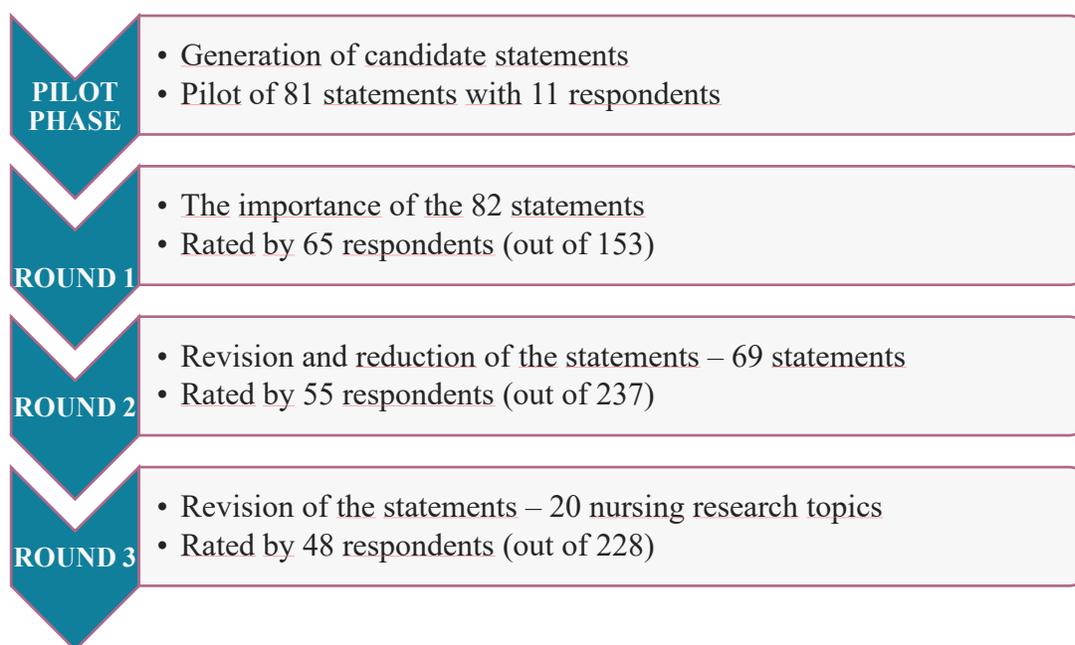


Figure 2. The Delphi process

2.6 Delphi round 1

Generating content for the first round Delphi, nursing research 82 statements (clustered in 18 themes) were developed based on the result of the pilot study. The first round data were collected with a web-based survey in the beginning of the year 2019. We distributed 153 questionnaires and of these, 65 questionnaires were completed. The response rate was 42.5 %. The respondents rated the importance of each statement on a 5-point Likert scale (0 = not important at all, 1 = of little

importance, 2 = of average importance, 3 = very important, 4 = absolutely essential) and had an option to give free text comments after every theme. Nursing research themes are presented in Table 1.

Table 1. Nursing research themes in round 1

ROUND 1 THEMES	
1	Information and communication technologies (ICTs) and eHealth in nursing
2	Palliative nursing care
3	Older people nursing
4	Primary health care, health promotion and disease prevention from nursing point of view
5	Nursing practice
6	Clinical nursing
7	Diseases from nursing perspective
8	Specific fields from nursing point of view
9	Public health
10	Occupational health in nursing
11	Environmental health issues
12	Nursing theory and philosophy
13	Professional development of nurses
14	Methodology in nursing science
15	Healthcare system

Of the respondents, 89 percent were female. The mean age of all of the respondents was 38 years the youngest being 23 and the oldest 65 years old. Most of the respondents were between 21 to 30 years of age (n=22) and 41 to 50 years of age (n=22). Circa thirty-seven percent had bachelor's degree as their highest education level, eighteen percent had master's degree and about sixteen percent had doctoral degree. Twenty-three percent stated their level of education as other. Half of the respondents were from the nursing field of education, 41.5 % from medicine and the rest from public health and jurisprudence fields of education. The respondents' working experience varied from one to 42 years, the mean being 15 years. In regards of nursing half of the respondents identified themselves as academics, teachers or researchers, while 30 % considered being a clinical practitioner and 20 % strategy and policy makers or administrative. The demographic characteristics of the respondent are shown in Table 2.

Table 2. Characteristics of the respondents in round 1, 2 and 3

	Round I		Round II		Round III	
Gender	N=65		N=55		N=48	
Female	58	89.2 %	45	81.8 %	43	89.6 %
Male	7	10.8 %	10	18.2 %	5	10.4 %
Age group	N=64		N=55		N=48	
20-30	22	34.4 %	14	25.5 %	13	25.0 %
31-40	13	20.3 %	10	18.2 %	14	29.2 %
41-50	22	34.4 %	23	41.8 %	16	33.3 %
51 or higher	7	11.0 %	8	14,5 %	6	12.5 %
Level of Education	N=65		N=55		N=48	
College Diploma	4	6.2 %	3	5.5 %	0	0.0 %
Bachelor's degree	24	36.9 %	13	23.6 %	12	35.4 %
Master's degree	12	18.5 %	11	20.0 %	14	29.2 %
Doctor's degree	3	4.6 %	1	1.8 %	1	2.1 %
Doctor of Sciences	2	3.1 %	5	9.1 %	1	2.1 %
PhD	5	7.7 %	8	14.5 %	7	14.6 %
Doctor in Profile	4	6.2 %	7	12.7 %	5	10.4 %
Other	11	16.9 %	7	12.7 %	3	6.3 %
Field of Education	N=65		N=55		N=48	
Medicine	27	41.5 %	33	60.0 %	20	41.7 %
Public Health	5	7.7 %	5	9.1 %	5	10.4 %
Nursing	32	49.2 %	15	27.3 %	19	39.6 %
Other	1	1.5 %	2	3.6 %	4	8.3 %
Employer (Option to choose multiple)	N=65		N=55		N=48	
Republican Center for Health Development	1	1.5 %	4	7.3 %	1	2.1 %
City or Regional health department	1	1.5 %	0	0.0 %	1	2.1 %
Medical University	22	33.9 %	24	43.6 %	17	35.4 %
Higher Medical College	18	27.7 %	14	25.5 %	8	16.7 %
Medical College	7	10.8 %	6	10.9 %	5	10.4 %
Hospital	16	24.6 %	9	16.4 %	13	27.1 %
Primary care/ Polyclinic	6	9.2 %	4	7.2 %	2	4.2 %
Other	5	7.7 %	2	3.6 %	1	2.1 %
Working experience	N=65		N=55		N=48	
1-10 years	33	50.8 %	20	36.4 %	23	47.9 %
11-20 years	9	13.8 %	9	16.4 %	7	14.6 %
21-30 years	20	30.8 %	25	45.5 %	17	35.4 %
31 or more years	3	4.6 %	1	1.8 %	1	2.1 %
City/Region represented			Round II		Round III	
			N=55		N=48	
Almaty City			17		12	25.0 %
Nur-Sultan (Astana) City			10		11	22.9 %
East Kazakhstan Region			7		7	14.6 %

Karaganda Region		5	4	8.3 %
Kyzylorda Region		5	4	8.3 %
Aktobe Region		4	1	2.1 %
Turkistan Region (f.k.a South Kazakhstan)		3	3	6.3 %
Akmola Region		1	0	0.0 %
North Kazakhstan Region		1	2	4.2 %
Shymkent City		1	1	2.1 %
West Kazakhstan Region		1	0	0.0 %
Almaty Region		0	2	4.2 %
Pavlodar Region		0	1	2.1 %

2.7 Delphi study round 2

In round two, the least rated statements from the round one were removed, and 69 statements remained for further evaluation. In addition, the theme ‘Occupational health in nursing’ was removed from round 2 questionnaire. An additional demographic question was added to scope which city or region the respondent represented.

Regarding the second round, 237 questionnaires were distributed, and out of these, 55 respondents completed the web-survey. The response rate was 23.2 %. As in round 1, the respondents rated the importance of each statement on a 5-point Likert scale (0 = not important at all, 1 = of little importance, 2 = of average importance, 3 = very important, 4 = absolutely essential) and had an option to give free text comments after every theme.

In this round, 82 percent of the respondents were female and the mean age of the respondents was 41 years. The age varied from 20 to 65 years and the biggest age group was 41 to 50 years (n=23). Thirty-eight percent of the respondents reported doctoral degree as their highest level of education, twenty-three percent had the bachelor’s and twenty percent the master’s degree. In second round, 60 % reported medicine as their field of education and a bit under third of the respondents were from the nursing field. Reported working experience varied from 1 to 32 years the mean being 17 years. A bit under half (47 %) of the respondents identified themselves as academics, teachers or researchers in regards of nursing, about third (35 %) as strategy and policy makers or administrative and the rest (18 %) as clinical practitioners. Most of the respondents, 30 %, reported to represent Almaty city, while 18 % represented Astana city (current Nur-Sultan), 13 % East Kazakhstan



region and both Karaganda and Kyzylorda region were represented by 9 % of the respondents. The demographic characteristics of the respondent are described in Table 2.

2.8 Delphi study round 3

We distributed 228 questionnaires and of these, 48 questionnaires were completed. The response rate was 21.1 %. The questionnaire contained 20 topics (Table 3), which were designed based on the second Delphi round study. We asked respondents to rate the importance of 20 nursing research topics in terms of the 3-point timeframe scale:

1. High priority; needs to be done urgently within the next 24 months
2. Medium priority: needs to be done within the next 2-4 years
3. Low priority; needs to be done within the next 5-10 years

Table 3. Nursing research topics in round 3

ROUND 3 NURSING RESEARCH TOPICS	
1	Pediatric nursing
2	Oncology nursing
3	Palliative care nursing
4	Critical care nursing
5	Stroke and heart failure nursing care
6	Seriously ill patients and their quality of life
7	Pressure injury
8	Clinical nursing research
9	Rehabilitation in nursing
10	Information and communication technologies (ICTs) and eHealth in nursing
11	Health promotion and disease prevention
12	Patient education
13	Patient outcomes and outcomes of nursing intervention research
14	Quality improvement in nursing and healthcare processes
15	Strategies and models for nursing practice
16	Workplace safety in nursing and nurses' physical health and psychological well-being
17	Professional development of nurses
18	Nursing education
19	Multidisciplinary and inter-professional collaboration in nursing science research
20	Conducting experimental/intervention studies in nursing science

In round 3, of the 48 respondents 90 % were female. Age of the respondents varied from 23 to 90 years the mean being 40 years. Third (33.3 %) of the respondents were between 41 to 51 years of age, followed closely by the age group of 31 to 40 years (29.2 %). Fourth (25.0 %) of the respondents belonged to the youngest age group of 20 to 30 years of age. 35 percent of the respondents had bachelor's degree as their highest level of education, 29 percent had master's degree and 29 percent had doctoral. Medicine was the most represented field of study (42 %), followed by nursing (40 %) and public health (10 %). Working experience in years varied from 2 to 32 years, and the mean was 15 years. Nearly half (47.9 %) of the respondents reported their working experience in years being between 1 to 10 years, and more than third (35.4 %) had been working 21 to 30 years. More than half of the respondent (54 %) identified themselves as academics, teachers or researchers in regards of nursing, 25 % as strategy and policy makers or administrative and 21 % as clinical practitioners (See Figure 3). Almaty city was the most represented region by the respondents (25 %), followed by Astana city (23 %), East Kazakhstan region (15 %), Karaganda region (8 %) and Kyzylorda region (8 %). The characteristics of the respondents are presented in Table 2. Most of the respondents in the last round 3 were working in medical universities (36%) or hospitals (27%) (See Figure 4).

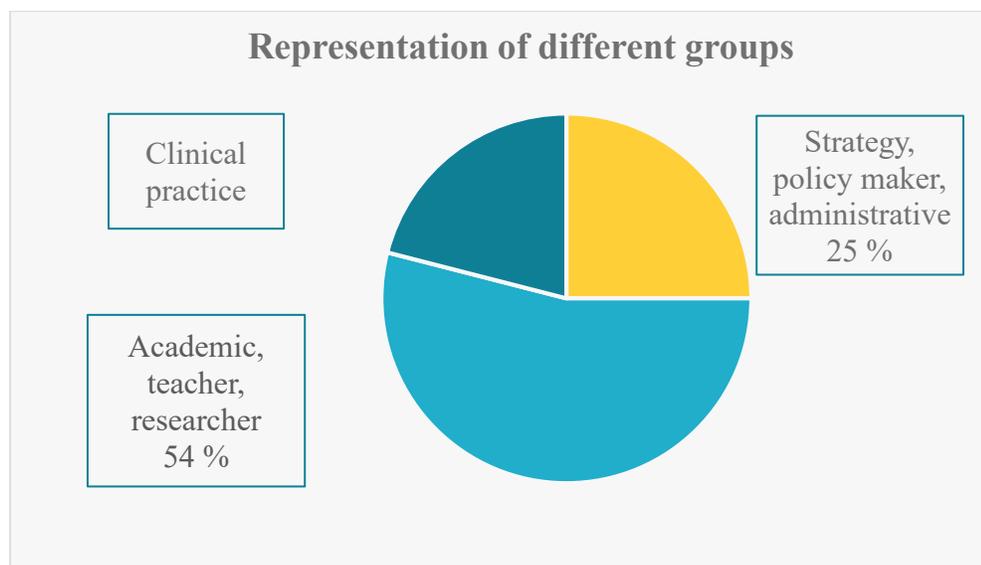


Figure 3. Representation of different respondent groups in round 3

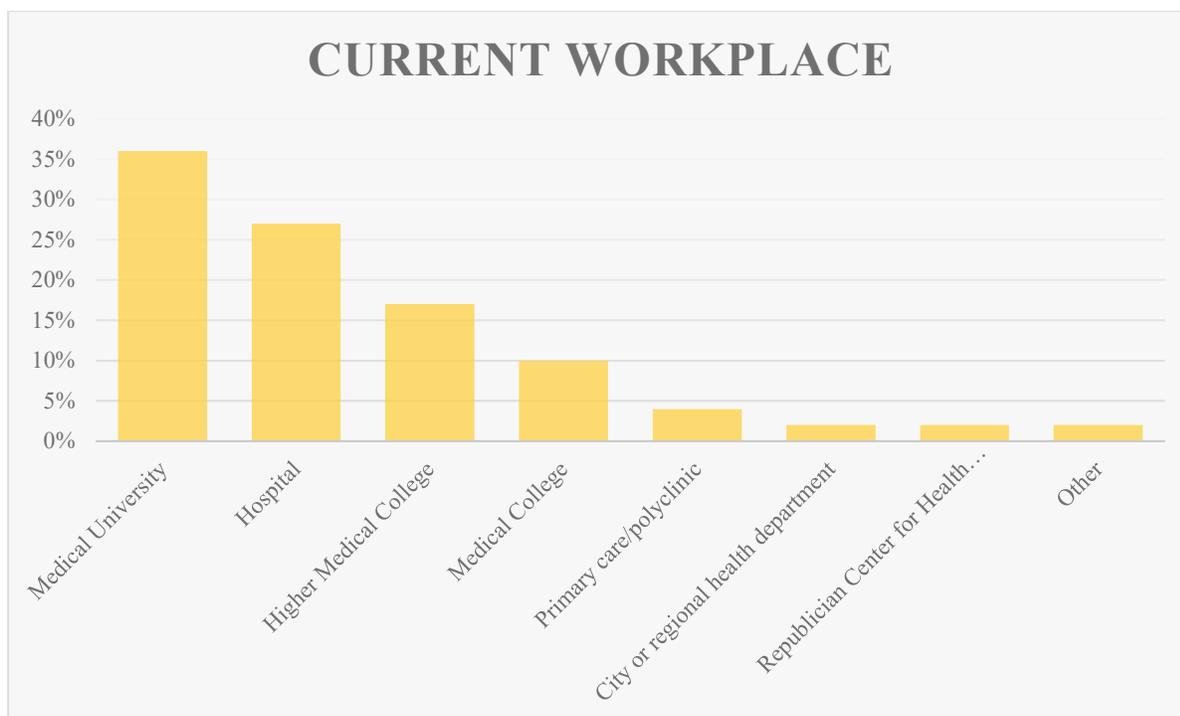


Figure 4. Current workplace of the respondents round 3

2.9 Strengths and limitations of the Delphi technique employed

The Delphi study technique applied here was a suitable choice for allowing to identify and prioritize nursing research topics in Kazakhstan. Information for the Delphi study was formulated based on thoroughly conducted literature reviews and reports on current global nursing research priorities, and a focus group interviews of Kazakh experts concerning the status and needs of nursing research. The provided material create a valid basis to create the Delphi statements. A total number of Delphi rounds was four including a pilot phase, which was enough to get a comprehensive picture of the nursing research topics needed in Kazakhstan. The Delphi technique can also be adapted for use in face-to-face meetings, which would have helped to form a consensus more rapidly among the respondents and ensure better response rate.

3 Final results on future nursing research priorities for Kazakhstan

The final results of this Delphi study concerning the future nursing research priorities in Kazakhstan can be clustered to three priority groups based on the timeframe that results are needed. The priority groups are high priority, medium priority and lower priority nursing research topics. Detailed information is illustrated in Figure 5.

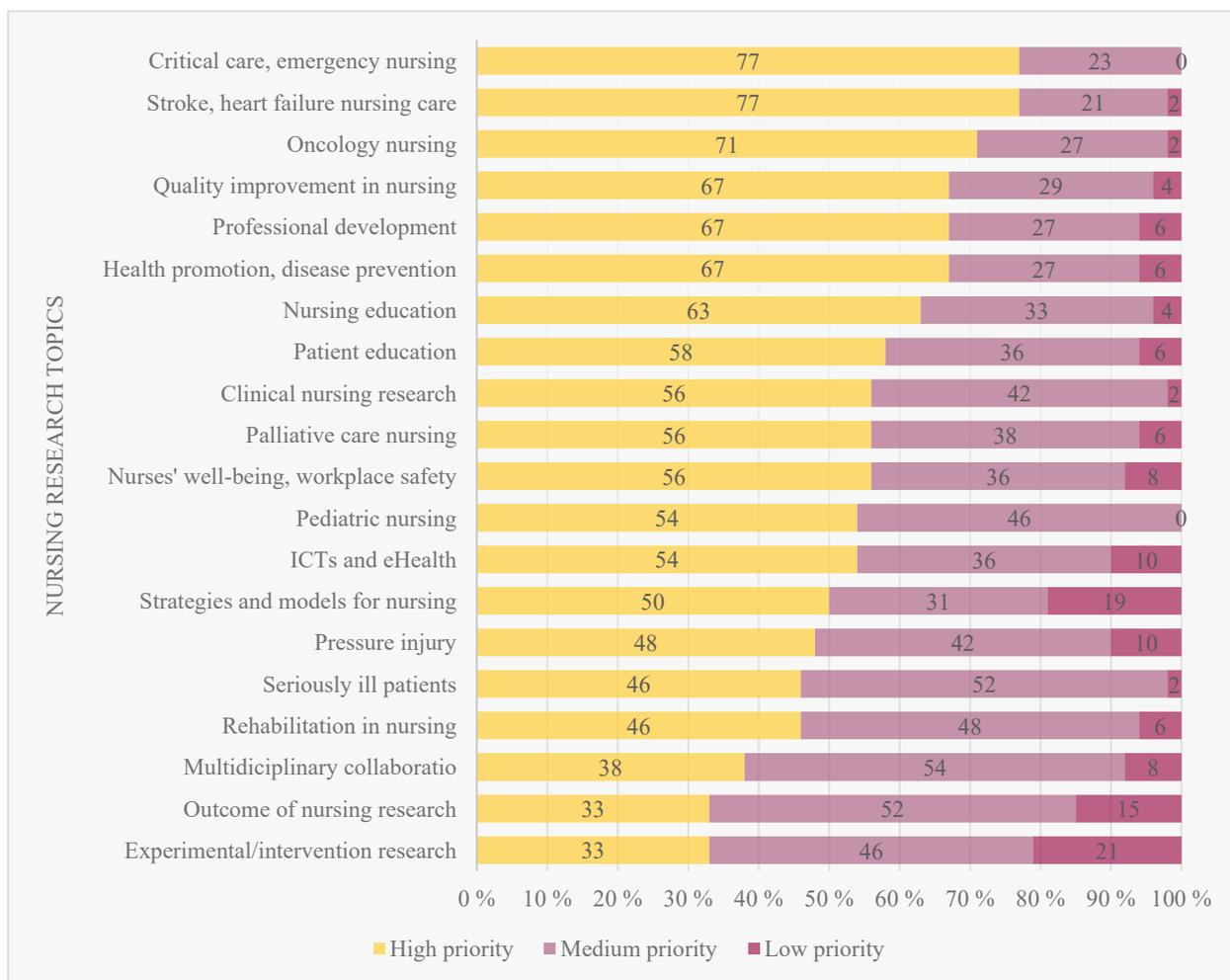


Figure 5. Nursing research topics rated by a timeframe priority

Critical care nursing and emergency nursing (77%) and stroke and heart failure nursing care (77%) were rated as the most urgent topics to conduct research in nursing in Kazakhstan. Oncology nursing (71%) was rated as the third most urgent topic and quality improvement in nursing (67%)

as the fourth most urgent topic to conduct research. Professional development (67%), health promotion and disease prevention (67%), and nursing education (63%) were also rated to be studied with high priority. This means that all of the above-mentioned topics need to be studied within the two-year timeframe. See Figure 6.

High priority nursing research topics (within 2 years)	Critical care nursing, emergency nursing (77%)
	Stroke and heart failure nursing care (77%)
	Oncology nursing (71%)
	Quality improvement in nursing (67%)
	Professional development (67%)
	Health promotion, disease prevention (67%)
	Nursing education (63%)
	Patient education (58%)
	Clinical nursing research (56%)
	Palliative care nursing (56%)
	Nurses' well-being, workplace safety (56%)
	Information and communication technologies (ICTs) and eHealth in nursing (54%)

Figure 6. High priority nursing research topics in Kazakhstan

Multidisciplinary and inter-professional collaboration in nursing science research (54%), seriously ill patients and their quality of life (52%), and patient outcomes and outcomes of nursing intervention research (52%) were rated as areas that need to be studied within 2-4 year timeframe. Conducting experimental/intervention research (46%), strategies and models for nursing (19%), and patient outcomes and outcomes of nursing intervention research (15%) were rated as areas need to be studied within 5-10 years. See Figure 7.

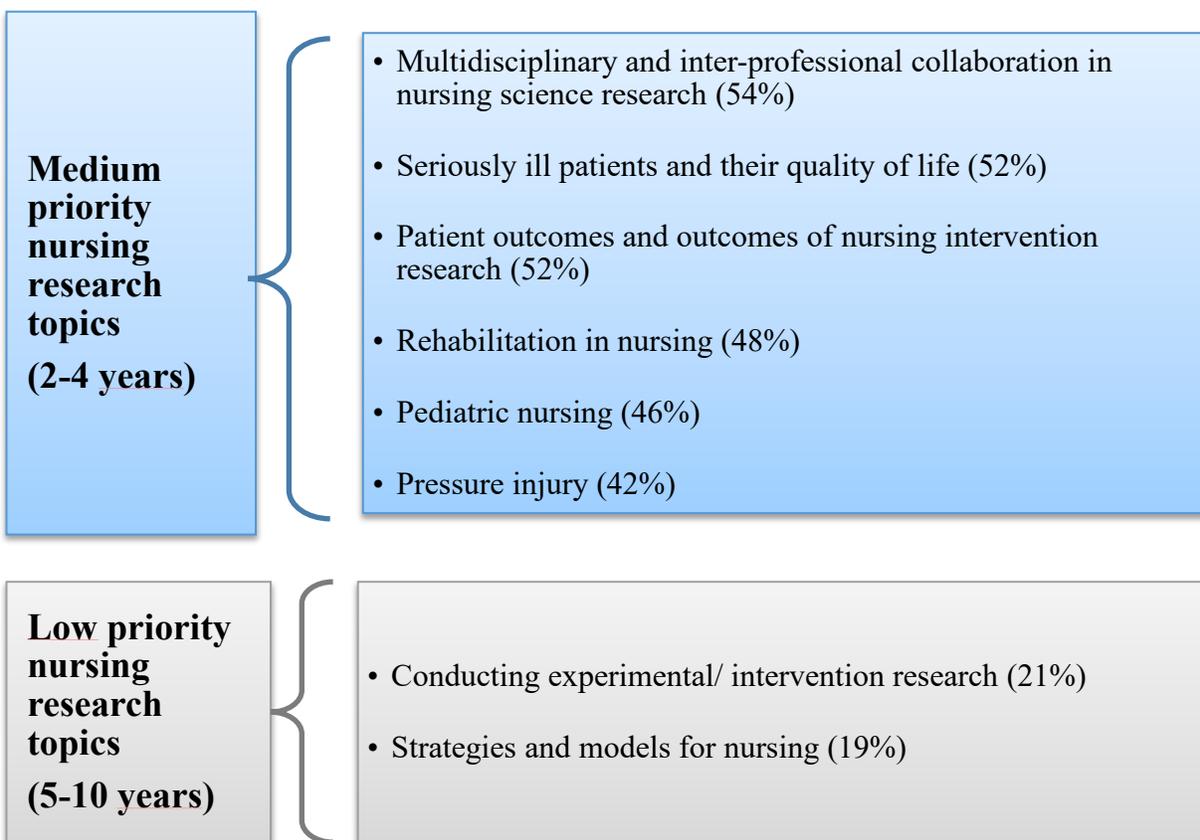


Figure 7. Medium and low priority nursing research topics in Kazakhstan

4 Recommendations

The following recommendations are offered for Medical universities to consider when designing actions to be taken in order to develop university specific nursing research agendas and nursing research in Kazakhstan.

1. To base the creation of nursing research strategy on the capacity analysis of faculty of university

The Medical universities can have different approaches to build their nursing research strategy. Firstly, they can build their nursing research agenda on the strengths of their staff and the general research priorities of the university. On the other hand, they can choose to build new capacities to their present staff or choose to recruit new capacity. After deciding on their approach, the medical university and their nursing department/faculty ought to analyse their staff capacities concerning the recommended topic areas for nursing science and nursing research. The assessment of skills, knowledge, and competences of nursing faculty personnel is needed in order to define the development and educational needs that their staff may have regarding nursing research and the new capacities they would need to recruit.

2. To collaborate with regional health care departments, hospitals, and polyclinics to create a nursing research agenda that serves the development of health services in Kazakhstan

Medical universities' nursing departments should collaborate with hospitals and polyclinics (Primary Health Care) in their region to create a mutual nursing research agenda for the district.

3. To establish national research priorities between medical universities to create university specific nursing research agendas

Medical universities should collaborate and agree upon nursing research priorities in order to create individual focuses and profiles throughout different universities in Kazakhstan. Cooperation among universities will bring benefits for all, and more importantly, it is highly advantageous for universities to strengthen their cost-effectiveness and to produce high-quality nursing research. Furthermore, targeted funding for nursing research should be allocated for research in accordance to jointly agreed nursing research strategies from regional health departments and ministry of health.

4. To offer research-based master and PhD education in nursing science.

In order to provide a high quality, internationally recognizable master and doctoral level education in nursing science, university specific nursing research agendas should be created and implemented, and the nursing research conducted in the university ought to be based on the agenda. Moreover, medical universities and higher medical colleges should include a key performance indicator system in their development plan that would support setting



goals and measuring staff and students' research activities in nursing research. This would also support strategic leadership.



5 Feedback on recommendations

Feedback and comments on this Recommendation report were collected from Kazakh healthcare experts twice, in June and September 2019. In the first round, general feedback of the recommendations and report were gathered from the healthcare experts and practitioners. In the second round, respondents were requested to give feedback based on the following items:

- 1) the relevance of the nursing research topics that have been prioritized as high priority, medium priority and low priority topics in the report,
- 2) the adequacy of the recommendations that are presented at the end of the report, and
- 3) suggestions concerning the development of nursing research in Kazakhstan. In addition, feedback was gathered from participants who attended the ProInCa Master Class held in Nur-Sultan in October 2019 by asking to comment specifically on the four recommendations defined in this report. Altogether 26 staff members and practitioners of Kazakh educational institutions provided feedback.

Overall, the respondents believed that the created recommendations to medical universities for the creation of nursing research agendas were relevant, well-focused, and current. Respondents felt it is important that medical universities cooperate and agree upon priorities for research in the field of nursing. Some respondents recommended that cooperation should be coordinated among universities and a platform needs to be built up to strengthen communication of personnel from different universities. Respondents also noted that leadership should be strong to motivate and support staff to cooperate with their colleagues in universities. Collaboration of nursing departments with local health organisations was deemed very important and a single research and development plan was recommended by respondents. Some respondents pointed out that doctoral programs in nursing science should be implemented only in universities where real nursing research is being conducted with publications in peer-reviewed journals. Based on the feedback received, it was not necessary to make any changes to the report or defined recommendations.



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Appendices

Appendix 1

Nursing research topic	Description
Multidisciplinary and inter-professional collaboration	Through intra- and inter-professional collaborative partnership, education and shared leadership will maximize the capacities and potentials of nurses and midwives. Inter-professional collaboration and education enable the innovative ways of improving and promoting evidence-based healthcare.
Nursing education	Research on nursing education is needed. Clinical practice in nursing education should be on the focus of nursing research.
Professional development in nursing	Development of competences, knowledge, and skills in nursing profession and the factors that affect them should be studied. The area of professional development and expertise in nursing should be studied.
Conducting experimental/intervention studies	An experimental/intervention studies should be conducted in nursing science to produce evidence and develop clinical nursing practice. For example, the efficacy of interventions provided by nurses.
Quality improvement in nursing	Quality improvement in nursing and healthcare work processes should be on the focus of nursing science research. Clinical research projects will benefit from teams of faculty and clinical practice nurses working collaboratively.
Health promotion and disease prevention	Health promotion in nursing and conducted by nurses should be studied. Focus of nursing research should be on health promotion and disease prevention, focusing on the wider issues around health and wellbeing of people.
Patient outcomes and outcomes of nursing intervention research	Nursing research should focus on patient outcomes and outcomes of nursing interventions e.g., how nursing activities and methods affect patient outcomes.
ICT and eHealth in nursing	Information and communication technologies (ICTs) and eHealth in nursing ICTs stand for all digital technologies that support the electronic storage, processing, and exchange of information in order to promote health, prevent illness, treat disease, and manage chronic illness. Healthcare big data refers to the vast quantities of digitalized data that is available to healthcare providers.