

# Clinical Nursing and Midwifery Research in the Eastern Mediterranean Region

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## ABSTRACT

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Nurses and midwives are well placed to improve the health outcomes of patients in a number of areas, so the fields of nursing and midwifery must include the ability to conduct rigorous research, synthesize findings into relevant evidence, and use research to inform practice. However, clinical nursing issues in regions such as the Eastern Mediterranean Region (EMR) are often under-researched. The three projects included in this proposal are part of a larger study funded by the Columbia University President's Global Innovation Fund in collaboration with the Office of Global Initiatives of Columbia University School of Nursing. This dissertation includes three aims: (a) conduct a scoping review of published clinical nursing research to assess the current state of research in the region, (b) conduct a formal program evaluation of a Research Summit that identified clinical nursing and midwifery research priorities and developed an action plan for the EMR, and (c) describe perceptions of barriers and facilitators to research utilization among nurse leaders in the EMR.

The results of the scoping review demonstrated that there was limited clinical nursing and midwifery research that has been conducted in the Region. The program evaluation indicated that the Summit was successful and a number of actionable projects have been carried out as a result. Furthermore, the results of the Barriers Scale (Funk et al., 1991) showed that the main barriers to research utilization were lack of funding and resources, lack of support, lack of interest, and lack of training while the main facilitators were placed into the categories of improving support and

research culture, resources, and education and training. GDP also significantly impacted the extent to which participants experienced barriers to research utilization.

It is important that more Region-specific research be carried out. In order to do this, the research skills of nurse/midwife researchers need to be enhanced and the dissemination of their research supported. Nurse and midwife researchers in the Region should develop consensus regarding specific regional clinical research topics to be given priority and provide support so that nurse and midwifery researchers overcome any barriers they face regarding utilizing clinical research in their practice so that patients can be provided with better and safer care.

## Table of Contents

List of Figures .....	v
Acknowledgements .....	vii
CHAPTER 1: INTRODUCTION .....	1
Background .....	1
Problem Statement .....	3
Parent Study .....	4
Aims, Methods, and Research Questions .....	5
Research Questions .....	10
Conceptual Model .....	10
Conclusion .....	11
CHAPTER 2: SCOPING REVIEW .....	12
Introduction .....	12
Scoping Review .....	12
Introduction .....	12
Materials and Methods .....	17
Search Strategy and Study Selection .....	17
Data Extraction .....	18
Results .....	18
Discussion .....	25
Limitations .....	29
Conclusions and Recommendations .....	29

Conclusion .....	31
CHAPTER 3: EVALUATION OF AN INITIATIVE TO BUILD CAPACITY FOR CLINICAL NURSING AND MIDWIFERY RESEARCH IN THE EASTERN MEDITERRANEAN REGION .....	
REGION .....	32
Introduction.....	32
Background Information.....	32
Phases of the Parent Project.....	34
Phase I. Identify core collaborators and the state of the science of nursing research in the Eastern Mediterranean Region.....	35
Identification of core collaborators.....	35
State of Science: identification of research topics through a scoping review of existing literature.....	35
Phase II. Conduct a Delphi survey to develop a comprehensive list of research experts and prioritized research topics .....	36
Development of Delphi instrument.....	36
Administration of Delphi survey.. .....	36
Phase III. Convene a summit to identify priorities for building capacity in the region....	38
Evaluation Method.....	38
Evaluation Plan.....	38
Survey development and administration.....	41
Results.....	49
Formative Evaluation.....	49
Participant surveys.....	51

Discussion .....	52
Conclusion .....	56
CHAPTER 4: BARRIERS SCALE .....	57
Introduction.....	57
Background Information.....	57
Methods.....	59
Participant Sample .....	59
Instrument .....	59
Data Collection Method.....	60
Data Analysis .....	61
Results.....	64
Barriers.....	72
Facilitators.....	73
Discussion.....	75
Limitations .....	77
Conclusion .....	77
CHAPTER 5: CONCLUSION .....	79
Background.....	79
Summary of Findings.....	79
Implications.....	81
Future Research .....	84
References.....	86
Appendix 1: Published Manuscript.....	94

Appendix 2: Complete Search Strategy.....	95
Appendix 3: Modified Barriers Scale .....	100



## List of Figures

<i>Figure 2.1:</i> Flowchart of articles selected for inclusion in scoping review.....	19
<i>Figure 2.2:</i> Study designs of clinical nursing research studies from EMR countries published between 2000-2015 (n = 210).....	22
<i>Figure 3.1:</i> Conceptual Model for the Program Evaluation .....	48
<i>Figure 4.1:</i> The relationship between the average barrier score and the GDP in \$10K of the country where the participant comes from.....	72

## List of Appendices

Appendix 1: Published Manuscript.....	94
Appendix 2: Complete Search Strategy.....	95
Appendix 3: Modified Barriers Scale.....	100

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## CHAPTER 1: INTRODUCTION

This chapter provides an overview of the dissertation, including background information, the problem statement and a summary of each study aim and findings.

### **Background**

The Eastern Mediterranean Region (EMR) as defined by World Health Organization (WHO) includes 22 countries: Bahrain, Kuwait, Qatar, Saudi Arabia, United Arab Emirates (UAE), Afghanistan, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco, the Sultanate of Oman (Oman), Pakistan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Palestine and Yemen (WHO, 2012). The Region is diverse in regards to its political, social, economic and health indicators (WHO, 2012). Overall, the burden of diseases resulting from a number of communicable, newborn, nutritional and maternal conditions have been successfully reduced in the Region (WHO, 2012). However, rates of other diseases have been increasing. According to the International Diabetes Federation, for example, the United Arab Emirates, Saudi Arabia, Bahrain, Kuwait, Oman and Egypt were in the top ten of countries that had the highest prevalence of diabetes worldwide in 2007 (DiabetesAtlas.org, 2015). In fact, throughout the Region, non-communicable diseases such as heart disease (up by 44%), stroke (up 35%), and diabetes (up 87%) are increasingly causing premature deaths and disabilities, often due to poor diet, high blood pressure, obesity and smoking, all of which are risk factors that can be prevented (Ghannem, 2011). In addition, it is feared that unrest and war in some countries in the Region may lead to a reemergence of diseases that had recently been in decline (Hay, 2017). In countries such as Lebanon and Jordan, an influx of refugees has also led to a strain on the system and new health challenges (Hay, 2017). These changes mean that nurses and midwives in the Region are facing new challenges, leading to the need to further develop nursing

knowledge and skills. It is critical that these professionals have access to and utilize current research that deals with the most relevant issues in the Region, including complex humanitarian emergency situations that increase health issues and challenge health infrastructure. In order to ensure that nurses and midwives have access to such research, it is vital that regional research priorities be identified along with any gaps in existing research.

There is a significant difference in wealth among the 22 countries included, with the per capita gross national product (GDP) being as high as \$134,420 in Qatar and as low as \$2000 in Afghanistan (Institute for Health Metrics and Evaluation, 2017). Seven of the EMR countries have over 20% of the population living below the poverty line: Afghanistan (36%), Egypt (22%), Iraq (23%), Pakistan (22%), Palestine (22%), Sudan (47%) and Yemen, (35%) and in Afghanistan, Yemen, Iraq, Pakistan and Sudan over one-third of the population faces food-insecurity (Institute for Health Metrics and Evaluation, 2017). This is of note because despite the wealth of some countries in the Region, the leading risk for disability-adjusted life years (DALYs) for females in the Region was child and maternal malnutrition (Hay, 2017). Even in EMR countries with high GDPs, most specialist facilities are located in the capital cities. This leads to health disparities between urban and rural regions. For example, child survival and other indicators of child health show a significant advantage in urban areas (Khawaja, Dawns, Meyerson-Knox, & Yamout, 2008). This makes the identification of region specific research priorities difficult, requiring collaboration among and input from nursing/midwifery experts from as many of the 22 countries as possible so the research priorities reflect the Region's diverse needs.

In keeping with the global trend, the EMR has also been experiencing a nursing shortage that has not only impacted hospital staffing, but also faculty staffing (Gherissi & Brown, 2014).

This shortage has added to existing time constraints on both practicing nurses and clinical nursing and midwifery researchers, leaving them less time to read and conduct research. Hence it is increasingly important that clinical nursing research be focused on the issues that have the greatest impact on the Region.

When it comes to the EMR, there is little available information on which clinical nursing research topics have been investigated and the gaps in existing research. It is important that this information be made available so that the limited research capacity is utilized in the most effective way. Besides the need to determine research priorities, factors impacting the utilization of research also need to be identified so that appropriate resources can be developed. Factors such as limited financial resources, limited educational opportunities for nurses beyond the baccalaureate (WHO, 2012), and insufficient time for pursuits not directly related to patient care (Toksoz, 2010) have been found to impact nurses and midwives in other parts of the world.

To address the gaps in the literature, I have conducted (a) a scoping review of the literature to provide nursing and midwifery researchers in the EMR with information to develop research priorities on topics where there is a critical need (Chapter 2), (b) a formal program evaluation of a Research Summit (Chapter 3), and (c) a survey of nurse experts in the Region to assess their perceptions of barriers and facilitators to research utilization (Chapter 4) so that strategies can be developed that will help ensure that nurses and midwives in the Region are able to use research to inform their practice.

### **Problem Statement**

Because nurses are well placed to improve the health outcomes of patients in a number of areas, the vision for nursing in the 21st century increasingly includes conducting quality research studies, synthesizing findings into research evidence, and then using the research and findings to

inform practice. However, much of the nursing and midwifery research has been carried out in the US and Europe, so it is vital that region-specific research be carried out and used to inform practice to address the unique healthcare challenges in the EMR.

### **Parent Study**

The projects included in this dissertation were part of a larger study funded by the Columbia University President's Global Innovation Fund and was conducted through the Office of Global Initiatives of Columbia University School of Nursing. The 'parent' project was launched in 2015 with nursing leaders from Eastern and Sub-Saharan Africa to build a network of midwifery and nurse researchers, identify regional priorities for nursing and midwifery research, develop strategies to address any gaps between existing research and the identified priorities, and devise a plan to implement the strategies. The project was extended to the EMR in 2016, and the research proposed for this dissertation is conducted in conjunction with the activities in the EMR. Columbia University School of Nursing worked in collaboration with the Faculty of Nursing at the School of Nursing at the University of Jordan, Faculty of Nursing at Jordan University of Science and Technology, Jordanian Nursing Council, Nursing Department, Faculty of Nursing at Badr University in Cairo, Rafic Hariri School of Nursing, American University of Beirut, King Abdulaziz University College of Nursing, WHO EMRO and Columbia Global Centers, Amman. This group of nurse leaders in the Region was identified through literature reviews, networks, the Columbia Global Centers in Amman, and the World Health Organization Regional Office for the EMR (WHO EMRO) to serve as regional core collaborators who helped identify potential candidates to complete a Delphi survey using specified criteria initially developed for a previous Delphi survey conducted among nurse and midwifery experts in Sub-Saharan Africa (Sun, Dohrn, Klopper, Omoni, Larson, 2015). The

Delphi survey technique is common in social and health sciences and is used to reach expert consensus on a particular topic using multistage survey rounds (Hasson, Keeney, & McKenna, 2000).

Another aim of the parent project was to convene a Research Summit in Amman, Jordan to confirm the regional research priorities that had been identified, develop achievable long-term action plans to address the research priorities, and establish committees to implement the action plans. This dissertation includes a formal evaluation of that Summit and the activities leading up to it. Furthermore, a survey was administered to the Summit participants to determine their perception of the barriers and facilitators to research utilization in the Region. The three specific aims of this dissertation that fit in with the broader aims of the parent project are outlined in the following section.

### **Aims, Methods, and Research Questions**

This descriptive study sought to determine the existing state of clinical nursing and midwifery research in EMR and develop clinical research priorities for future research in the Region. Table 1.1 presents the specific aims of the studies and the methods used to achieve those aims. The aims of this dissertation have been addressed in three separate manuscripts, which are presented in the next three chapters of this proposal. Chapter two is a scoping review of the peer-reviewed clinical nursing and midwifery literature conducted in the EMR. The purpose of the review was to assess the state of the research in the Region and identify any gaps. Chapter three proposes a formal program evaluation of a Research Summit that was held in Jordan to disseminate the findings of a Delphi survey carried out to determine clinical nursing and midwifery research priorities in the EMR and develop an action plan for the Region. The chapter evaluates the extent to which the Summit met its initial aims using two survey tools adapted from



Rowe, Marsh and Frewer (2004). Chapter four presents the findings from the administration of the Barriers Scale (Funk, Champagne, Wiese & Tornquist, 1991) to identify perceived barriers and facilitators to utilizing research in the EMR. The aims, methods and findings for each chapter are detailed below in Table 1.1.

Table 1.1: Specific aims of the studies and the methods used to achieve those aims along with the findings

Specific Aims	Methods	Findings
Chapter 2: Assess the current state of clinical nursing and midwifery research in the Eastern Mediterranean Region.	1) Conduct a scoping review of peer-reviewed clinical nursing and midwifery research from the Eastern Mediterranean Region.	A total of 210 articles were included in this scoping review. Topics researched most frequently were related to maternal child health, women’s health, mental health, patient experience including patient satisfaction, health belief/health behavior and cancer. Most of the studies took place in Jordan, Iran and Lebanon (n=106, 58 and 35 respectively).
Chapter 3: Conduct a program evaluation of a Research Summit that identified clinical nursing and midwifery research priorities in the Eastern Mediterranean Region and developed an action plan.	1) Develop a program evaluation plan guided by an appropriate theoretical framework and choose appropriate instruments for the evaluation.	The positive impact of the Summit included the positive results of the surveys and the completion of the actionable projects that were carried out as a result of the Summit.

- 2) Administer the evaluation surveys adopted from Rowe et al. (2004) to the core-collaborators and participants of the Research Summit.
- 3) Analyze and synthesize the findings of the evaluation.
- 4) Follow up regarding the status of the actionable projects resulting from the Summit.

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Chapter 4: Determine the extent to which nurses consider each item on the Barriers Scale a barrier and whether the GDP of the country, the position of the nurse (academic or other), or completing the survey before or after

- 1) Administer the Barriers Scale (Funk et al. (1991) to participants of the Summit and to additional nurse leaders outside of the Summit who had taken part in a Delphi survey
- 2) Analyze data from the Barriers Scale to determine barriers and

GDP was found to significantly impact the extent to which participants experienced barriers to research utilization, with participants from low GDP countries experiencing the barriers to a greater extent. The main barriers could be placed into four broad categories of lack of funding and resources, lack of support, lack of interest, and

the Summit was associated with differences in the responses.

facilitators to research utilization in the Region.

lack of training while the main facilitators were placed into the categories of improving support and research culture, resources, and education and training

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## **Research Questions**

Aim 1: Assess the current state of clinical nursing and midwifery research in the Eastern Mediterranean Region through a scoping review of the literature.

What clinical nursing and midwifery research topics have been published over the past 10 years in the Eastern Mediterranean Region?

Aim 2: Conduct a program evaluation of a Research Summit that identified clinical nursing and midwifery research priorities in the Eastern Mediterranean Region and developed an action plan.

To what extent did the Research Summit successfully meet its initial aims?

Aim 3: Describe perceptions of barriers and facilitators to research utilization among nurse leaders in the Eastern Mediterranean Region and assess the association between perceptions of barriers and three factors: the GDP of the country, the position of the nurse (academic or other), or timing of survey completion (before or after a research summit).

What are perceived barriers and facilitators of research utilization among nurse leaders in the Eastern Mediterranean Region?

What is the relationship between perceived barriers for research utilization and GDP of the country, the position of the nurse, or timing of survey completion?

## **Conceptual Model**

Because the current dissertation includes two studies that are based on distinctly different theories, there is no overarching conceptual model. A conceptual model underpinning the program evaluation was devised specifically for that study and is presented in that chapter, Chapter 3, the evaluation of the research Summit.

## **Conclusion**

The goal of this dissertation was to determine the clinical research priorities for nurses and midwives in the EMR, conduct a program evaluation of the Summit held for the Region, and determine the perceived Region-specific barriers and facilitators to utilizing research. Because of the changing state of health in the Region and the limited human resources, it is vital that nurse and midwife researchers focus their attention on the areas where the need for clinical research is greatest. Evidence from research is required if nurses and midwives are to provide the most effective care. In order to ensure that nurses and midwives have access to relevant research, it is important that clinical research priorities be identified that are specific for the Region. Furthermore, it is important to be aware of barriers or facilitators that may impact research utilization so that strategies can be developed to help ensure nurses and midwives are willing and able to use research to inform their practice.

## CHAPTER 2: SCOPING REVIEW

### **Introduction**

This chapter includes a scoping review of clinical nursing and midwifery research in the Eastern Mediterranean Region (EMR) with the purpose of achieving aim 1 of this dissertation, which was to assess the current state of clinical nursing and midwifery research in the Region. It includes the following sections: introduction, materials and methods, results, discussion, limitations, and conclusions and recommendations. This manuscript has been published, see Appendix 1 for published manuscript.

### **Scoping Review**

#### **Introduction**

Nurses and midwives practicing in the Eastern Mediterranean Region (EMR) face challenging responsibilities with increasing communicable and non-communicable disease cases and lifespans and a decreasing nursing workforce (WHO, 2012). For example, the International Diabetes Federation reported that as of 2010 the Region included six of the ten countries with the highest rates of diabetes in the world, with the United Arab Emirates topping the list, followed by Saudi Arabia, Bahrain, Kuwait, Oman and Egypt respectively (DiabetesAtlas.org, 2015). Approximately 9.7 percent of the population of this Region has diabetes, with numbers expected to double over the next two decades (DiabetesAtlas.org, 2015). Moreover, the EMR has an urgent need to improve infrastructure and community-based programs to respond to increased morbidity and mortality due to chronic diseases such as cardiovascular disease, stroke, cancer and diabetes mellitus (Ghannem, 2011). For example, up to 50% of men in some countries in the region smoke (WHO, 2013), and more than 50% of the women are overweight (WHO, 2012).

These issues have been compounded by changing demographics. According to the latest available information, the EMR has experienced one of the world's largest growths in population over the past century (Toksoz, 2010), leading governments to struggle to meet the basic healthcare needs of their citizens. The life expectancy in the Region increased more than 12 years between 1980 and 2007 (WHO, 2012). A growth in the elderly population in coming years will also create a health care burden that will impact the way health systems function. Furthermore, conflicts and wars in the region have resulted in population migration that has led to major and urgent health issues including the re-emergence of infectious diseases such as polio and measles.

The EMR has also experienced a number of emerging infectious disease threats, some of which are found primarily in this Region, such as Middle East Respiratory Syndrome (MERS) (UNICEF, 2013). Furthermore, despite making significant strides in decreasing under-five mortality by 58% between 1990 and 2013, the EMR still lagged behind the 65% decrease achieved by Latin America and East Asia (UNICEF, 2013). In countries such as Egypt, Iran, and Syria, chronic malnutrition affects more than a quarter of children under five years old, with that number reaching as high as 58 percent in Yemen (UNICEF, 2013). In the EMR, the World Health Organization (WHO) reported that in 2010 1.8 million infants failed to receive the third dose of DPT vaccine and the target to eliminate measles was not achieved (WHO, 2012). Furthermore, Jordan saw a re-emergence of polio and measles in 2015 after the influx of Syrian refugees (Carnegie Endowment for International Peace, 2015). The Region has been defined by WHO as inclusive of the following countries: Bahrain, Kuwait, Qatar, Saudi Arabia, United Arab Emirates (UAE), Afghanistan, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libyan Arab



Jamahiriya, Morocco, the Sultanate of Oman (Oman), Pakistan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Palestine and Yemen (Regional Office of the Eastern Mediterranean, 2016).

In response to these issues, governments have increased spending on health care services and access. However, due to challenges such as inadequate staffing and infrastructure, as well as a shortage of well-educated nurses and midwives who are able to inform their practice with current research, closing the gap between the current state of healthcare and the targets set by governments remains a major challenge (Ghannem, 2011).

As healthcare professionals who provide support, care, and advice to women during pregnancy and labor, as well as newborn care, midwives are well-situated to provide many interventions that could address many of the issues affecting these regions, not limited to promoting normal birth, detecting any complications for the mother and/or baby, providing appropriate assistance and performing emergency procedures when necessary (ICM, 2011), which could, in turn, reduce maternal mortality and under-five mortality (Centers for Disease Control and Prevention, 2010). In the EMR, there are several categories of health care workers that are considered midwives. These include registered midwives (who have completed a formal educational program), enrolled midwives (midwives currently enrolled in an educational program), community midwives (registered midwives attached to a general practice), traditional birth attendants (untrained midwives), along with a number of other community health professionals with backgrounds in fields such as nursing and public health who may or may not have completed educational programs (ICM, 2011). Midwifery in some countries in the Region is often considered a low status job as midwives are perceived as being obstetric assistants and therefore subordinate to physicians or nurses (Ghérissi & Brown, 2015). However, in recent years the situation for midwives has improved because they have become more organized in the

EMR and North Africa, have more advanced educational opportunities, and have begun to be more autonomous in their practice (Ghérissi & Brown, 2015). Jordan, which has a diploma program for midwives who play a major role in labor/delivery for women, plans to develop a bachelor's degree program in the near future to expand the midwifery cadre with increased competencies. Midwifery bachelor's programs exist in countries such as Tunisia and in many countries the costs are low, but in some countries the programs lack sufficiently qualified teachers (Centers for Disease Control and Prevention, 2010). One exception is Oman, which requires advanced level qualifications for the teachers and has invested in midwifery resources for students (Ghérissi & Brown, 2015).

Despite the fact that nurses and midwives are vital for the improvement in healthcare, a shortage remains in many countries in the EMR (World Health Statistics, 2015). The WHO's 2015 "World Health Statistics" publication reported that Lebanon has an estimated 27 nursing and midwifery personnel for every 10,000 people, Egypt 35, the UAE 32, and Saudi Arabia 49—just over half that of the United Kingdom (88 per 10,000) (World Health Statistics, 2015).

As frontline health care staff, nurses and midwives need to be prepared for these changes and use principles of evidence-based practice to guide clinical practice (Toksoz, 2010). They are particularly well positioned to provide primary care and aid in improving vaccination compliance, reducing infant mortality, diabetes and obesity, and many other healthcare conditions for which nurses and midwives routinely provide care; however, their practice needs to be informed by relevant, up-to-date research (Toksoz, 2010). If the healthcare challenges facing the EMR are to be overcome, it is imperative that research specific to the region be conducted and used to inform evidence-based practice (Stiffler & Cullen, 2010). To do this, nursing and midwifery research is critical because nurses and midwives are the primary care

providers and have unique insights into health needs of the populations they serve (Hendrich, Chow, Skierczynski, & Lu, 2008). Due to their high level of patient involvement, nurses and midwives play a key role in the clinical management of patients and need to rely on evidence to guide their decision-making. Thus, it is essential that the nursing and midwifery workforce both produces and has access to relevant evidence-based resources and is empowered to use them at the point of care (Salem, 2013).

Unfortunately, a serious gap in clinical nursing and midwifery research still exists. In a paper published about a decade ago, fewer than 5% of published papers in the world's leading 200 medical journals were produced in Arab countries (Maziak, 2006). Out of 682,000 publications, only 341 (0.05%) were focused on nursing in the EMR but even among the published papers, the majority were focused on education and healthcare professional attitudes rather than on clinical nursing or midwifery research (Maziak, 2006). While one study in the past decade reviewed nursing research in Jordan (Khalaf, 2013), we found no comprehensive review of the status of clinical nursing and midwifery research in the entire EMR. A scoping review includes a wide variety of research that has not previously undergone a comprehensive review and can be useful to inform future research (Arksey & O'Malley, 2005). Therefore, the aim of this project was to conduct a scoping review of articles indexed in major health services literature search engines published between 2000-2015 to evaluate existing clinical nursing and midwifery research in 22 countries in the EMR and identify gaps in the literature. Furthermore, the results of this review may serve to guide the development of clinical research priorities for the region.

## **Materials and Methods**

### *Search Strategy and Study Selection*

With consultation from a health sciences librarian at the Columbia University Medical Center a literature search was conducted using the following databases: PubMed, CINAHL/EBSCO and Embase®. In addition, the Jordanian Database for Nursing Research was used to maximize the number of relevant articles found. Keywords and medical subject headings (MESH terms) were used to search for articles in the first three databases while a search by year was used to find articles in the Jordanian Database for Nursing Research. Inclusion criteria determined a priori were (1) were original research, (2) conducted in Middle Eastern countries as defined by World Health Organization, (3) had at least one nurse or midwife author (but not limited to nurses in Middle Eastern countries), (4) published in an indexed, peer-reviewed journal between January 1, 2000 and December 31, 2015, (5) included patient outcomes in the results, (6) written in English or Arabic, and (7) included an abstract. Articles were excluded if they were not research (e.g., reviews, commentaries, editorials, reports, conference abstracts, theses, discussion papers, instrument development, case studies). The complete search strategy is included in the Appendix 2.

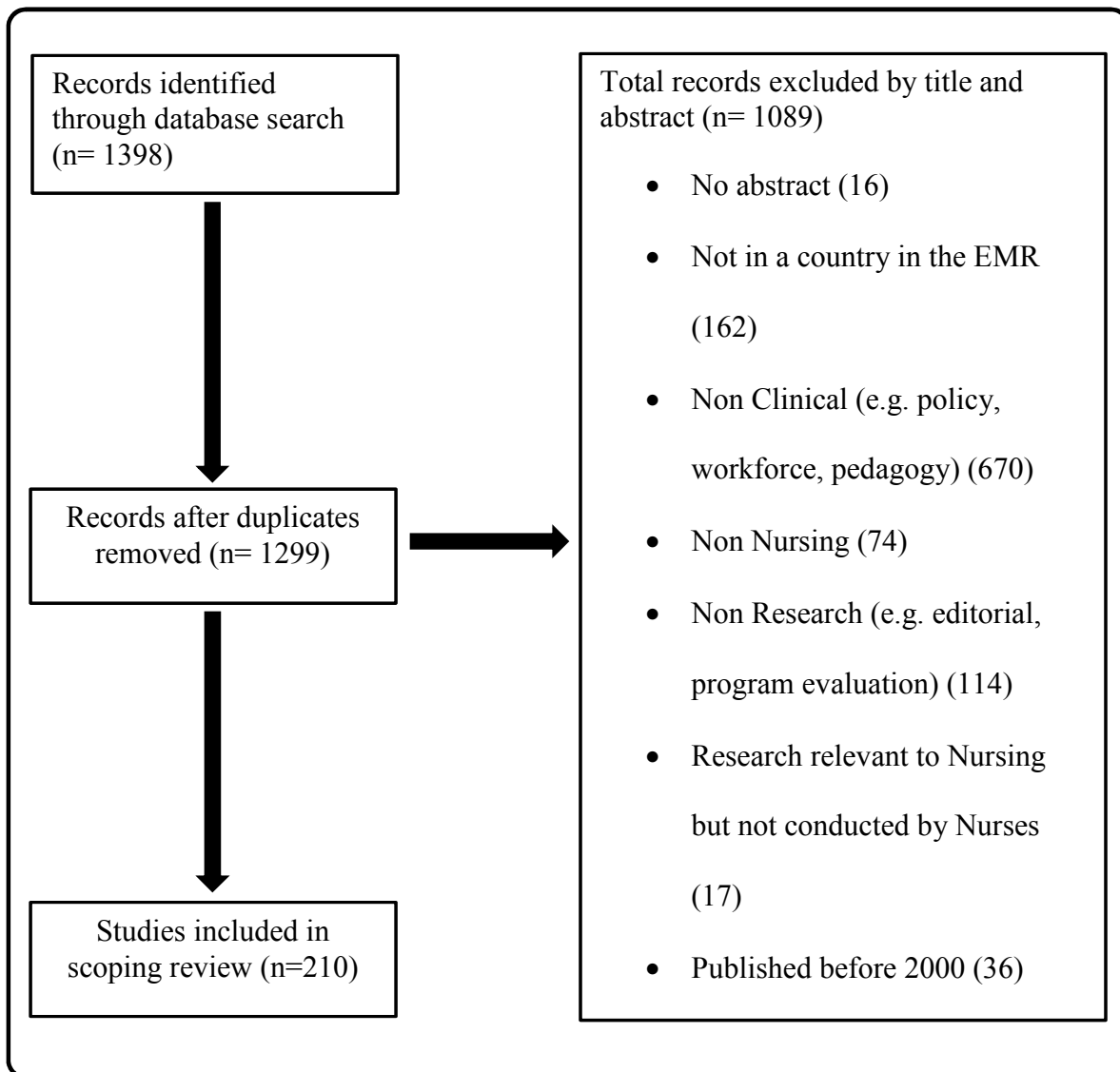
Because authors may not be identified as nurses on publications (i.e., they may simply provide their academic credential such as PhD), we also vetted our results with five core collaborators, who are known nursing experts within the Region to elucidate research that may have been missed. We defined an expert as 1) a professional nurse or midwife, 2) with a doctoral degree 3) holding a leadership role such as a dean within a school of nursing or holding a high-ranking position within the Ministry of Health, 4) who conducts or directs those conducting research 5) in a country within the defined region.

### *Data Extraction*

Results of searches were imported into EndNote™ and duplicates were eliminated. One researcher reviewed titles and abstracts of the remainder for possible inclusion, and a second reviewer independently confirmed the results. Any discrepancies were reviewed collectively until consensus was reached. Data from EndNote™ were exported into an Excel workbook (author, year, title, journal, issue, volume, language, country of publication, country of study, study design, sample size, population, and author affiliation) and summarized. Each publication was assigned one to four topics independently by two researchers using a constant comparative method (Glaser & Strauss, 1967). One researcher reviewed the results and categorized up to four topics covered in each publication. Categories were reviewed by both researchers until consensus was reached.

### **Results**

The search resulted in 1398 articles (78 articles from PubMed, 7 articles from CINAHL/EBSCO, 708 articles from Embase®, 411 articles from the Jordanian Database for Nursing Research and 194 articles collected through direct contact with core collaborators in the Region). After removing duplicates, 1299 abstracts remained. Subsequently 1089 were excluded: 16 articles because they had no abstract, 162 were not conducted in a country in the EMR, 670 were not clinical (i.e., research related to policy, workforce or pedagogy), 74 were non-nursing or midwifery, 114 were non-research (e.g. editorial, program evaluation, conference, proceedings), 17 were relevant to nursing, but not conducted by nurses, and 36 were published before 2000. After these were eliminated, a total of 210 articles were included in this scoping review (Figure 2.1).



*Figure 2.1:* Flowchart of articles selected for inclusion in scoping review.

Articles were published in journals from Austria, Australia, Bosnia and Herzegovina, Canada, China, France, Germany, Lebanon, New Zealand, India, Iran, Ireland, Jordan, the Netherlands, Pakistan, Romania, Switzerland, Taiwan, Tanzania, the UK and the United States. Of the 22 countries in the EMR defined by WHO, 10 (Iran, Jordan, Lebanon, Morocco, Pakistan, Saudi Arabia, Sudan, Syria, The United Arab of Emirates, and Yemen) were the focus of these studies, with the majority (n=199; 94.76%) relating to Jordan, Iran and Lebanon (Table 2.1).

Although the search included both Arabic and English language publications, all articles identified were published in English.

Table 2.1: EMR countries (n=10) from which clinical nursing research was published between 2000-2015

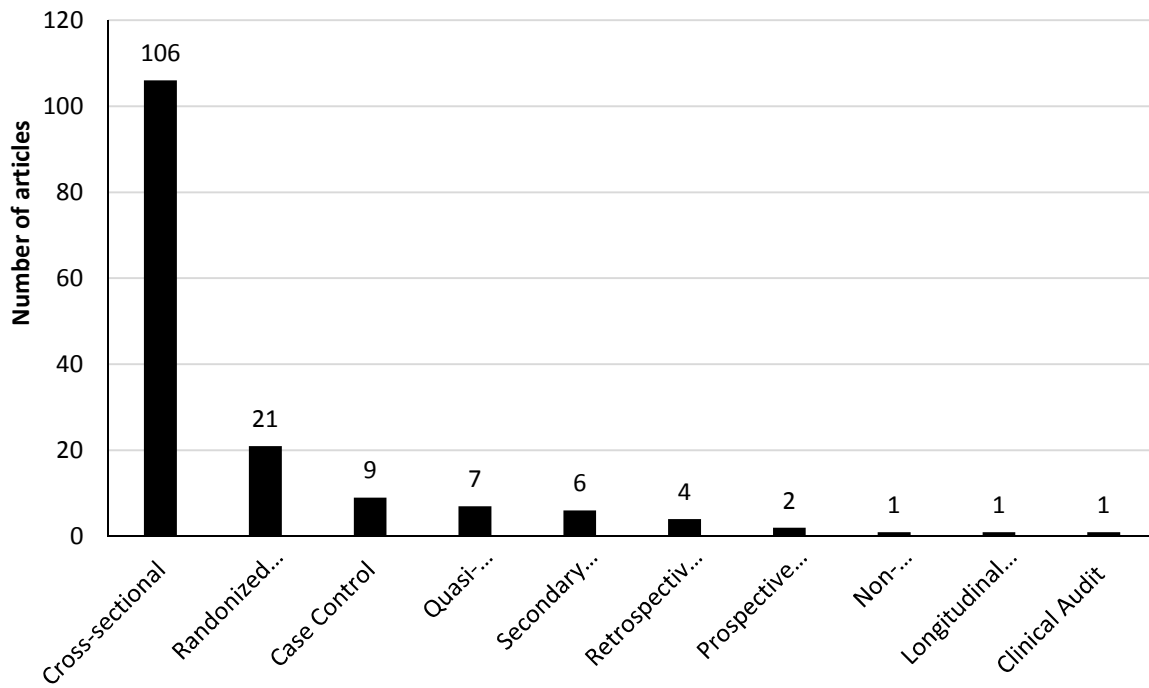
<b>Country Name</b>	<b>Number (%) of times included in a study</b>
Jordan	106 (50.48%)
Iran	58 (27.62%)
Lebanon	35 (16.67%)
Pakistan	4 (1.90%)
Saudi Arabia	2 (0.95%)
Syria	1 (0.48%)
Morocco	1 (0.48%)
United Arab of Emirates	1 (0.48%)
Sudan	1 (0.48%)
Yemen	1 (0.48%)
<b>Total Studies</b>	<b>210</b>

The majority of the studies (n= 158, 75.24%) used quantitative designs, primarily cross-sectional (n= 106). Other quantitative designs were randomized controlled trials (n=21), quasi-experimental (n=7), secondary data analysis (n=6), case control study (n=9), retrospective cohort (n=4), prospective cohort (n=2), non-randomized comparison (n=1), longitudinal prospective (n=1) and clinical audit (n=1). Six studies (2.86%) included both qualitative and quantitative components. Approximately one-fourth (n=46, 21.90%) of studies used qualitative research designs. Twenty-four studies used descriptive exploratory designs and semi-structured

interviews. Other qualitative designs include phenomenology (n= 10), grounded theory (n=7), longitudinal narrative (n=2), ethnography and microethnography (n=2) and focus groups (n=1) (Figure 2.2). Studies were published in 90 different journals, the most frequent of which was International Journal of Nursing Practice (n=27; 30%).



### Quantitative designs in articles studied (n=158)



### Qualitative designs in articles studied (n=46)

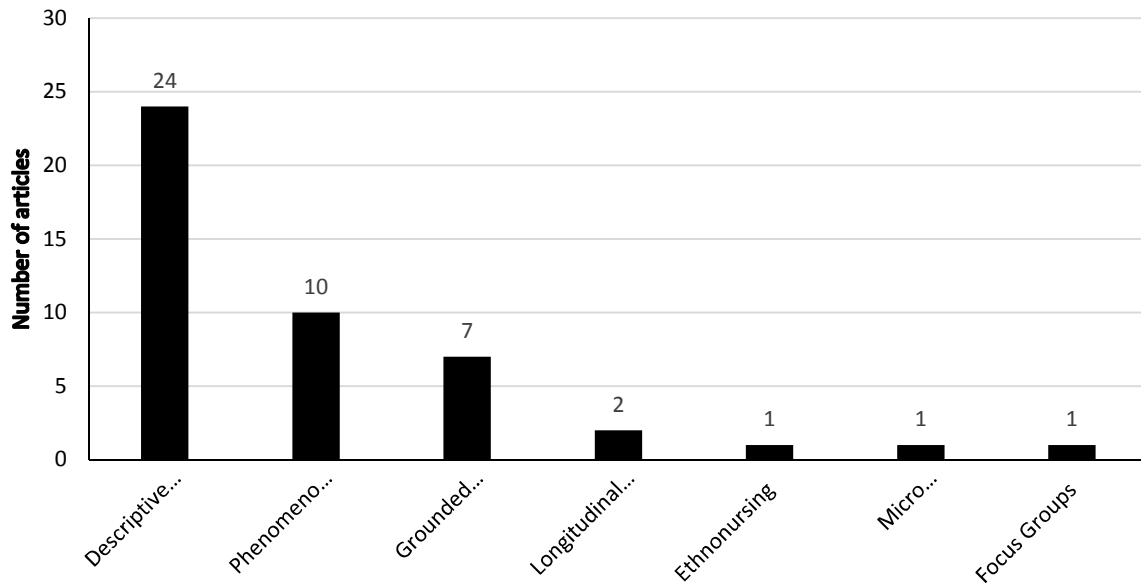


Figure 2.2: Study designs of clinical nursing research studies from EMR countries published between 2000-2015 (n = 210)

Topics researched most frequently were related to maternal child health (n=57, 27.14%); women’s health (n=38, 18.1%); mental health (n=35, 16.67%); patient experience including patient satisfaction (n=34, 16.90%); health belief/health behavior (n=30, 14.28%); cancer (n=29, 13.81%); family caregivers’ health (n=22, 10.5%); pediatrics (n=21, 10%); cardiac diseases, especially myocardial infarction (n=21, 10%); pain including symptom management, self-care and quality of life (n=20, 9.52%); chronic diseases, including hypertension and diabetes mellitus (n=17, 8.1%); acute care (n=15, 7.14%); community health including disease prevention and health promotion (n=11, 5.24%); pulmonary diseases (n=9, 4.3%); adolescent health (n=8, 3.81%); abuse including violence and sexual assault (n=7, 3.33%); war/conflicts (n=6, 2.86%) as outlined in Table 2.2..

Other topics that were researched less frequently were complementary and alternative medicine (n=5, 2.38%); HIV/AIDS (n=4, 1.90%); obesity (n=4, 1.90%); culturally relevant care (n=4, 1.90%); palliative care (n=3, 1.43%); men’s health (n=3, 1.43%); infectious diseases (n=2, 0.95%); oral health (n=1, 0.48%); health technology (n=1, 0.48%); end-stage renal diseases (n=1, 0.48%); and substance abuse (n=1, 0.48%), Table 2.23. It must be noted that in articles fitting into more than category, such as pediatric cancer, the article was counted twice, once for cancer and once for pediatrics, making the total percentage for topics more than 100%.

Table 2.2: Clinical nursing research topics (n=28) published between 2000-2015 from EMR countries (n=210)

<b>Topics covered</b>	<b>Number (%) of times topics covered in literature</b>
Maternal Child Health	57 (27.14%)
Women’s Health	38 (18.1%)
Mental Health	35 (16.67%)

Patient Experience/ Patient Satisfaction	34 (16.90%)
Heath belief/ Health Behavior	30 (14.28%)
Cancer	29 (13.81%)
Family Caregivers Health	22 (10.5%)
Pediatrics	21 (10%)
Cardiac Diseases	21 (10%)
Pain/ Symptoms Management/ Self Care/ Quality of Life	20 (9.52%)
Chronic Diseases	17 (8.1%)
Acute Care	15 (7.14%)
Community Health/ Disease Prevention/ Health Promotion	11 (5.24%)
Pulmonary Diseases	9 (4.3%)
Adolescents	8 (3.81%)
Abuse/ Violence/ Sexual Assault	7 (3.33%)
War/ Conflicts	6 (2.86%)
Complementary and Alternative Medicine	5 (2.38%)
HIV/AIDS	4 (1.90%)
Obesity	4 (1.90%)
Culturally Relevant Care	4 (1.90%)
Palliative Care	3 (1.43%)

Men's Health	3 (1.43%)
Infectious Diseases	2 (0.95%)
Oral Health	1 (0.48%)
Health Technology	1 (0.48%)
End-Stage Renal Diseases	1 (0.48%)
Substance Abuse	1 (0.48%)

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*Note:* Each paper had one or more topics assigned to it so the total percentages are greater than 100%.

## **Discussion**

In this comprehensive scoping review, the majority of the studies were quantitative and cross-sectional in design and were published in journals published outside the EMR, suggesting a possible need for more journals that include clinical nursing and midwifery research to be published within the region. Despite the increasing prevalence in the region of chronic diseases such as cardiovascular disease, stroke, cancer and diabetes mellitus (WHO, 2012), a limited number of studies on such conditions have been conducted. Furthermore, although a search for articles in Arabic was conducted, none were found, which could limit access to the studies that have been conducted if nurses and midwives lack the English needed to read and understand research, or present difficulties for nurse and midwifery researchers who do not speak English fluently. Furthermore, fewer than half of the 22 countries in the EMR included (10/22, 45.4%) had published, indexed research. This is important to note as the economies in the EMR range from extremely poor (e.g., Yemen) to extremely wealthy such as Qatar and the UAE (World Bank, 2009), resulting in wide variations in health-care systems. Yemen, for example, has a ratio

of three physicians for every 10,000 people as compared with Qatar with a well-developed healthcare system including 23.1 physician and 61.8 nurses per 10,000 people (The World Health Report, 2006). However, we found one midwifery article from Yemen, and no clinical nursing or midwifery research from Qatar in this scoping review.

Economics may also have an impact on the level of education achieved by most nurses/midwives. For example, affluent EMR countries such as Gulf countries have established numerous scholarship programs to support citizens to study nursing abroad at the bachelor's, master's and doctoral levels (Almalki, FitzGerald, & Clark, 2011). These nurses may be better equipped to conduct research; however, the differences among countries in the region may mean that the results in one country are not generalizable to the entire Region. More research is needed to determine whether wealth has had an influence on either research output or the generation of new nurses and midwives.

As noted, the high level of wealth of some countries has not necessarily translated into an increase in clinical nursing research as yet. This review found that the majority (80%) of clinical nursing studies emanated from Jordan, Iran and Lebanon (n=106, 58 and 35 respectively) with very few studies originating in the Gulf. A possible reason for this may be the length of time that nursing education has been a major focus in the various countries. For example, several undergraduate and graduate programs have been established in Jordan since 1972 and the first Jordanian student with a PhD graduated in 1986, followed by many others (Khalaf, 2013). These nurses often work as nurse educators in Jordanian nursing programs, with a part of their role being dedicated to conducting research. This increased productivity has been boosted by nursing PhD program which was established in Jordan in 2005 (Khalaf, 2013). On the other hand, a bachelor nursing degree in Saudi Arabia has been recently made mandatory to practice nursing

but there is no a nursing PhD program available in the country (AlMadani, 2015). In addition, the master's degree in nursing is still not offered to males in Saudi Arabia (AlMadani, 2015).

Similar to Jordan, nursing education in Iran has undergone major changes since the revolution in 1979, moving from an apprenticeship training model to an academic model (Khomeiran & Deans, 2007). A series of changes transformed educational programs, enabling nursing students to undertake study up to and including the PhD level, and Iranian nursing students also now have full access to professional journals (Khomeiran & Deans, 2007).

Lebanon has an even longer history of nursing education, as the School of Nursing at the American University of Beirut was established in 1905. In 2005, there were eight universities with Bachelor of Science in nursing programs, three of which also had masters programs (Huijer, Nouredine, & Dumit, 2005). Although PhD level study is not yet available in Lebanon, nursing law states that nurses should conduct research on nursing care to improve themselves and scientifically evolve (Salameh & Barbour, 2006). On the other hand, in Saudi Arabia it was not until 2005 that the late King Abdullah Bin Abdulaziz Al Saud introduced the King Abdullah Scholarship Program in response to an identified need to develop human resources in the Kingdom including nursing workforce (Saudi Arabian Cultural Mission, 2006). Other Gulf nations then followed suit. Because many nursing students started in baccalaureate degree programs and are progressing through masters and doctoral programs, the impact of these scholarships on clinical research may not yet be observable.

In regards to the topics of the clinical nursing research, although emerging and re-emerging communicable diseases have a significant impact on countries in the EMR, they have not frequently been the focus of nursing research (UNICEF, 2013). Instead, clinical nursing research has remained primarily focused on reproductive health. While important, with the

emerging prevalence of chronic diseases such as diabetes cardiovascular disease, stroke, and cancer, there is a need to widen the focus of nursing research to include these as well. Although a large body of knowledge regarding the etiology and biology of such diseases exists through clinical research conducted by physicians and other scientists (Maziak, 2006), the lack of nursing research means that findings regarding nursing implications are lacking. As nurses are front-line healthcare staff who have extensive contact with patients, this gap could negatively impact patient outcomes and satisfaction.

There were also interesting findings regarding the studies that did not fit the inclusion criteria for this review. In our initial search we also found 78 articles related to nursing workforce, 25 of which focused specifically on challenges to nursing recruitment and retention in the region. Thirty articles referred to the nursing shortage and 38 articles reported negative perceptions of nursing/midwifery as a career choice, leading to a high reliance on expatriate workers. This indicates two major and related problems facing nursing and midwifery in the EMR: 1) difficulties in recruitment and retention and 2) nursing and midwifery being considered a low status job in the region. That these issues have been a focal point of nursing and midwifery research may partially explain the lack of clinical nursing and midwifery research in the region. These challenges also illustrate that nursing/midwifery is still at an early stage of development in the EMR, with many social and cultural obstacles to overcome. When these are viewed as more desirable professions, and nurses and midwives are regarded as well-educated professionals, there may be more support and opportunities for them to carry out clinical research.

Although research by other health care professionals such as physicians can make important contributions to nursing and midwifery, it is vital that nurses and midwives also conduct research to address the clinical issues specific to their profession and provide support for

evidence-based practice. This was an overall major gap in existing nursing and midwifery research in the EMR; to date clinical nursing and midwifery research has targeted a limited number of issues and been published primarily from a few countries in the region.

### **Limitations**

While there is undoubtedly additional nursing and midwifery research within the Region, we focused specifically on clinical nursing and midwifery research. This paper reports on midwifery and clinical nursing research identified by searching only four databases: CINAHL, Embase®, Pub Med and the Jordanian Database for Nursing Research between the period of 2000 and 2015, along with articles collected directly through core collaborators that were published during the same period. Other databases may have revealed additional results. Furthermore, in some cases it was difficult to identify whether a nurse or midwife was an author as this was not clearly stated. Because of this, the articles provided by the core collaborators were vital; it is possible that other research was conducted by nurses or midwives but was not readily identifiable as such, and was inadvertently excluded. Other articles may also have been excluded due to the author's lack of affiliation with a school of nursing, or when credentials were omitted by the publisher. Finally, we only included complete original research articles, not abstracts from conference proceedings. Despite these limitations, this review reflects what nurses or midwives seeking evidence may reasonably expect to find when seeking culturally and regionally relevant nursing and midwifery research, and provides insight into the overall state of nursing and midwifery science within the region.

### **Conclusions and Recommendations**

This scoping review examined the nursing and midwifery literature published over a 15-year period. One hundred five clinical nursing and midwifery articles were found covering nine



clinical topics, the majority focusing on reproductive health. Studies were published in just a few countries in the EMR, and national differences in levels of wealth and development of health-care systems may mean that the results are not easily generalizable. This lack of clinical nursing research may be one factor leading to difficulties in implementing evidence-based nursing practice. Future studies could include assessments of other areas of nursing and midwifery research, as well as analyses to determine associations between country wealth and culture, research output, and/or nursing and midwifery workforce volume. Furthermore, it is recommended that nurse and midwife authors be identified as such through their titles to provide clarity to those seeking to utilize the research.

Based on this review, more clinical research needs to be conducted by nurses and midwives; the scope of that research needs to be widened to respond to health needs and improve the standard of nursing care in the EMR. To facilitate this, nursing and midwifery education programs and health care organizations need to create a culture that emphasizes the importance of research by providing nurses and midwives with the support and resources they need to carry out clinical studies. Nursing and midwifery education programs should equip nurses to carry out research and conducting clinical research should be a vital part of the role of nurses and midwives in academic positions. Healthcare organizations should allocate funding to ensure nurses are able to conduct clinical research and research mentors should guide nurses who are interested in conducting research for the first time. Protected research time also needs to be allocated to nurses and midwives conducting clinical research, which would alleviate the stress of trying to conduct research while providing care to a full patient load or fulfilling teaching requirements.

While many of these issues are present globally, this scoping review confirmed their existence in the EMR, and the acute need for change. Furthermore, strategies need to be developed that encourage collaboration between nursing and midwifery faculty members and clinicians to assure that clinical research is disseminated and used to improve patient care.

### **Conclusion**

This comprehensive scoping review was used to assess the current state of nursing and midwifery research in the Eastern Mediterranean Region. This information can then be used to help determine the clinical nursing research priorities for the region and for specific countries within the Region.

## CHAPTER 3: EVALUATION OF AN INITIATIVE TO BUILD CAPACITY FOR CLINICAL NURSING AND MIDWIFERY RESEARCH IN THE EASTERN MEDITERRANEAN REGION

### **Introduction**

This chapter presents the background information for a project conducted by the Office of Global Initiatives (OGI) of Columbia University School of Nursing to identify clinical nursing and midwifery research priorities in the Eastern Mediterranean Region (EMR) and develop action plan to respond to regional research gaps and needs. The chapter then outlines the methods to achieve Aim 2 of this dissertation, which was to conduct a formal program evaluation of this OGI-sponsored project. The data collection and analysis processes are also described.

### **Background Information**

In 2014, the Columbia University School of Nursing OGI received funding from the University President's Global Innovation Fund to launch a collaborative project with nursing leaders from Eastern and Sub-Saharan Africa and from the Eastern Mediterranean regions with the overarching goal of improving access to high quality region-specific research. In order to do this, the project sought to build a network of midwifery and nurse researchers, identify regional priorities for nursing and midwifery research, develop strategies to address any gaps between existing research and the identified priorities, and devise a plan to implement the strategies. Identifying priorities and gaps for clinical nursing and midwifery research was deemed as an important issue because nurses and midwives are central to health service delivery and often the primary frontline healthcare workers in regions with the greatest health needs (World Health Organization (WHO), 2013). As healthcare challenges such as HIV/AIDS, tuberculosis, and maternal and child health arise and new diseases emerge, developing a strong health workforce

has become a key agenda item for many nations (WHO, 2013). Because nurses and midwives provide the bulk of clinical care, it is important that nurses generate research relevant for improving clinical practice (Estabrooks et al., 2008).

One of the international projects was to collaborate with nursing and midwifery leaders in the Eastern Mediterranean Region (EMR), drawing on a strong pre-existing relationship with the Columbia Global Center in Amman, which was already established in the Region. The EMR as defined by World Health Organization (WHO) includes 22 countries: Bahrain, Kuwait, Qatar, Saudi Arabia, United Arab Emirates (UAE), Afghanistan, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco, the Sultanate of Oman (Oman), Pakistan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Palestine and Yemen (World Health Statistics, 2015)

The capacity for clinical nursing and midwifery research is limited by a shortage of nursing staff and faculty (Estabrooks et al, 2008; Baumann & Blythe, 2008; US News and World Report, 2015) and by the developing status of many Middle Eastern nations (The World Bank, 2015). These factors restrict opportunities to conduct clinical research because of limited financial resources and educational opportunities for nurses beyond the baccalaureate (Baumann & Blythe, 2008) and insufficient time for nursing pursuits not directly related to patient care (Estabrooks et al., 2008). Defining research priorities makes it possible to build a strong foundation of localized evidence so that nurses and midwives can inform their practice using research and achieve positive patient outcomes (Melnik & Fineout-Overholt, 2011). The OGI research team recognized that it was important to understand the clinical research priorities in the Region so resources for nursing and midwifery research could effectively target areas of greatest need. Thus, the overall goal of this project was to identify the clinical nursing research gaps and

needs in the EMR as a first step in developing a plan for building capacity to conduct research with potential to improve clinical practice in nursing and midwifery.

In addition to these known factors, the research team under the OGI recognized that it was important to understand the clinical research priorities in the Region so that the resources for nursing and midwifery research could more effectively target areas where the need is greatest. Thus, the overall goal of this project was to develop a plan for building capacity to conduct research with potential to improve clinical practice in nursing and midwifery by first identifying the clinical nursing research gaps and needs in the EMR. The aim of this paper is twofold: to describe the process used for planning, implementing and evaluating this project, and to present consensus-based recommendations and communicate them broadly to lay the groundwork for building research capacity. It is hoped that this summary will be of use to others planning similar collaborative global projects. For this dissertation, I participated as a member of the team that planned each stage of the project, identified the theoretical underpinnings, and then developed and implemented the program evaluation plan for Phase III of the project, described below. I also took notes during the various sessions that took place during the Summit, administered the evaluation surveys during the Summit, and analyzed them after the Summit.

### **Phases of the Parent Project**

In carrying out the project, the team used a three-phased approach. In Phase I regional core collaborators were identified and a scoping review of literature regarding the state of the science in clinical nursing and midwifery clinical nursing research in Middle Eastern countries was conducted. In Phase II a comprehensive inventory of regional nursing experts was compiled and the experts were asked to prioritize nursing research topics using a Delphi survey approach. In Phase III a regional summit to produce recommendations for building research capacity was

planned and convened. During all three phases communication was key; thus a conceptual model was adapted that focused on the development of effective communication.

Herein Phase I and II of the project are briefly summarized, and they are reported in detail elsewhere (Alhusaini, Sun & Larson, 2016; Sun et al., 2017). Phase III, the EMR Summit, is described in detail and the results of the participant evaluation are reported. In addition, the conceptual model that guided the project is described. The evaluation protocols used in the study were approved by the Institutional Review Board at Columbia University Medical Center.

*Phase I. Identify core collaborators and the state of the science of nursing research in the Eastern Mediterranean Region*

Identification of core collaborators. Nurse leaders to serve as regional core collaborators were identified through consultation with staff of the Columbia Global Centers in Amman and the World Health Organization Regional Office for the EMR (WHO EMRO). The criteria were a) recognition as a national/international leader in clinical nursing and midwifery within the Region, b) doctorally prepared; and c) actively involved in research (Hasson, Keeney, & McKenna, 2000). Seven were identified (three from Jordan acting as one voice, and one each from Saudi Arabia, Egypt, Lebanon and WHO EMRO). These core collaborators contributed feedback throughout the entire planning process to assure that the project was responsive and appropriate for the needs of the Region.

State of Science: identification of research topics through a scoping review of existing literature. A scoping review to identify frequently researched clinical nursing and midwifery topics in Middle East was conducted (described in Chapter 2; Alhusaini, Sun & Larson, 2016). A search of PubMed, CINAHL/EBSCO, Embase®, and the Jordanian Database for Nursing Research resulted in 210/1398 articles which met inclusion criteria that they: (1) were original

research, (2) were conducted in EMR countries as defined by World Health Organization, (3) had at least one nurse or midwife author (but not limited to nurses in EMR countries), (4) were published in an indexed, peer-reviewed journal between January 1, 2000 and December 31, 2015, (5) included patient outcomes in the results, (6) were written in English or Arabic, and (7) included an abstract (Alhusaini et al., 2016).

*Phase II. Conduct a Delphi survey to develop a comprehensive list of research experts and prioritized research topics*

*Development of Delphi instrument.* The Delphi survey technique is used commonly in social and health sciences to reach consensus among experts on a particular topic using multistage survey rounds (Hasson, Keeney, & McKenna, 2000). The surveys were staged using on-line survey software (Qualtrics, <https://www.qualtrics.com/research-suite/>), and each round was pilot tested by five members of the research team. Potential candidates to complete the survey were identified with the assistance of the core collaborators using specified criteria initially developed in a previous Delphi survey conducted among nurse and midwifery experts in Sub-Saharan Africa (Sun, Dohrn, Klopper, Omoni, Larson, 2015). This initial group then contributed an expanded list of research experts in the Region who were potentially eligible to take part in the Delphi survey (Sun et al., 2017).

*Administration of Delphi survey.* Round I of the survey was administered via email to 107 experts in 20 countries in early February 2016 and consisted of a single an open-ended question asking participants to list up to five critical nursing research priorities in their country (Sun et al., 2017). Forty-two responses (47.3% completion rate) from 16 countries were received. Initial respondents were also asked to suggest other possible experts in the Region, creating snowball sampling for subsequent rounds.

Three more participants were invited; however, they did not respond. Round II supplied the respondents with a list of the topics identified in Round I and asked them to rank the topics from 1 to 10 based on priority for the Region. Convergence of opinions was assessed using percentage agreement as the primary parameter and an ordinal ranking system was used to organize the research topics to provide as much information as possible (Sun et al, 2017). Round III provided the respondents with the prioritized topic list and had participants rate the topics from Rounds 1 and II in the same way as had been done in Round II and the results of Round III were used to assign a final designation of priority ranking (using the ranking selected by the highest percentage of participants). A total of thirty-eight experts responded in all three rounds (Sun et al., 2017). Delphi Round III produced a set of 41 main topics and 26 subtopics prioritized by the rankings selected by the highest percentage of participants. The topics were compared to the research topics extracted from the scoping review to determine any gaps in the literature. This final product was a listing of 67 research topics in priority order.

There were both concordance and mismatches when comparing the results of the scoping review and Delphi survey. The topics ranked highest as critically important in the Delphi survey were diabetes (95.7%), hypertension (91.3%), cardiovascular disease (87.0%), cancer (82.6%) and breast cancer/mental health (78.3% each); however, topics such as diabetes and hypertension were found to have limited literature in the scoping review with issues such as maternal child health (27.14%) and women's health (18.1%) being researched much more frequently. Concordance between the critical priorities and existing research was found for mental health (16.67%) and cancer (13.81%), and to some extent for cardiovascular disease (10.0%). Other topics ranked as critical in the Delphi survey, such as emergency preparedness for disasters



(75%) and culturally competent approaches to health promotion and care (75%), were under-researched according to the scoping review (0% and 1.90% respectively).

### *Phase III. Convene a summit to identify priorities for building capacity in the region*

A 2-day Summit was held in Amman, Jordan in July 2016. The goals, objectives and agenda for the Summit were developed through collaboration between the Columbia OGI research team and the regional core collaborators via conference calls and e-mails. The participants who completed the Delphi survey were invited to attend, along with the core collaborators and other nurse leaders whom they suggested be invited. Furthermore, core collaborators were asked to invite two attendees other than themselves from their home countries. To ensure representativeness, the organizers sought to invite at least one person from every country in the EMR, and travel to the conference was fully supported for most participants. However, due to wars in the Region and difficulties acquiring the visa, only 13 of the 22 EMR countries were represented at the Summit. Most of the attendees had previously taken part in the Delphi survey and all were regional experts in the field.

## **Evaluation Method**

### **Evaluation Plan**

The purpose of the Phase III evaluation was to evaluate the outcomes and products of the Summit against the criteria established by the collaborators during the initial stage which were:

- 1) convene a Summit within one year attended by nursing and midwifery experts representing the entire region;
- 2) identify shared regional priorities in clinical research with examples of projects to address these priorities;
- 3) develop a regional action plan to achieve WHO's strategic direction and priorities using WHO's (2007) framework of action to accomplish goals reached

by group consensus; and 4) make a timeline and plan to assess the accomplishment of the actions defined (Table 3.3).

As part of this dissertation, an evaluation plan was developed for each phase of the project which included a conceptual model for the project's formative and summative evaluation plan that incorporated aspects from Shannon and Weaver's Information Theory (Shannon & Weaver, 1948). Shannon and Weaver's communication model describes six basic components of communication: information source, message, transmitter, noise source, receiver, and destination. The model depicts how knowledge is transmitted from a source (the sender), through a transmission medium (with noise and distortion), and receiver. The general model was adapted so that it incorporated the various steps of the project that led to the Summit as it provides a basis for the process of communicating and disseminating research topics that suited this Summit.

The model was used to break down the factors that shaped and impacted the message communicated at the Summit during each step of the process. For example, the information source that was disseminated at the Summit was the data extracted from the scoping review and Delphi survey. These data prompted the transmitters, the expert nurse scientists, who then created specific goals or research priorities.

These goals and research priorities were communicated through various avenues such as pre-Summit meetings and the Summit and they were filtered through the 'noise' that may impact them such as funding, geographic location, and resources available. The 'noise' shaped the signal that eventually reached the 'receivers', the clinical nurse scientists and practitioners. The final goal is that the receivers will alter their practice or clinical research to match the priority research topics in order to achieve the long term outcome or the destination message, which is to ensure the clinical research priorities of the region are being met in order to improve clinical practice.

For the purposes of this evaluation, the long-term outcome (destination message) cannot be assessed until initial and intermediate outcomes are achieved. Thus we modified Shannon and Weaver's model by adding concepts from the Theory of Planned Behavior, TPB (Ajzen, 1985), to guide our assessment of the participants and organizers' behavioral intentions to conduct research on the priority topics communicated during the Summit. The combined conceptual model is illustrated in Figure 3.1.

A series of questions for the Summit participants were used from an established questionnaire and organized according to the constructs of TPB: attitudes, social norms, and perceived behavioral control (Table 3.1). Items to assess attitudes focused on the processes involved with organizing the Summit. Items to assess social norms elicited information about outside influences. Item to assess perceived behavioral control solicited participants' beliefs about their ability to act on the information provided during the Summit. Besides the surveys, the outcomes of the actionable projects were also examined to evaluate the success of the Summit and determine whether participants had followed through with the intentions they reported in the survey.

A limitation of solely using Shannon and Weaver's model is that it is linear in nature and does not take into account the dynamic nature of communication. Although the model acknowledges that 'noise' may distort the message, the model does not make provisions for issues such as 'receiver' interpretation, which may deviate from the intended meaning (Chandler, 1994). Therefore, the conceptual model for this dissertation has been strengthened through adding the TPB, which has constructs that reflect the non-linear nature of communication. The TPB also provides a way for the response to the message to be contextualized by taking into account factors such as attitudes and social norms. Because the conceptual model was being used

for an evaluation, it was important that it allow for the exploration of internal participant factors that may be overlooked by using the original Shannon and Weaver model. One of the limitations of our project was that it did not include the long-term outcome of the communication, which is normally assessed in the Shannon and Weaver model, so the long-term goal of modifying practice or clinical research could not be assessed in this evaluation.

#### *Survey development and administration*

Two surveys were administered: The first to capture core collaborators' perceptions regarding the organization of the Summit and the second to capture participants' perceptions regarding success of the Summit. The purpose was to determine factors that influenced the message that reached the receivers or their intention to use the information.

The core collaborator survey and the participant survey were based on surveys previously used by our team for a similar summit in Eastern and Sub-Saharan Africa (Sun et al., 2015). They were adapted from a validated instrument developed by Rowe, Marsh and Frewer (2004). The instrument was developed based on a nine criteria proposed by Rowe and Frewer (2000) that they believed should be satisfied for a successful program. They fall under two categories: acceptance criteria (issues related to public acceptance such as fairness) and process criteria (issues related to the process of organizing the exercise). The criteria falling under acceptance are representativeness, independence, early involvement, influence, and transparency while resource accessibility, task definition, structured decision making and cost-effectiveness fall under process criteria. For definitions of each criterion, see Table 3.2.

To maximize the probability of receiving valid and reliable responses, items measured the same criteria in different ways (for example, 'My organization provides resources that encourage nurses/midwives to conduct and use research, such as computers and access to

databases’ and ‘The facilities are inadequate for implementation’, which are both related to resource accessibility).

Table 3.1: Organizer and participant surveys organized according to the construct variables of the Theory of Planned Behavior (TPB)

<b>Construct</b>	<b>Organizer survey adapted</b>	<b>Participant survey adapted from</b>
<b>Variable</b>	<b>from Rowe, Marsh and Frewer (2004)</b>	<b>Rowe, Marsh and Frewer (2004)</b>
<b>Attitude</b>	<p>Was the context to the Summit clearly identified?</p> <p>Were all persons with a legitimate interest in the issue (and therefore the outcome of the participation exercise) clearly identified?</p> <p>Were all the parties involved early enough to become familiar with all the (timeliness) elements of the Summit, in order to make a proper contribution?</p> <p>Was the scope of the Summit clear and appropriate?</p>	<p>I am likely to be able to implement the recommendations for clinical research priorities that arose from the Summit in my research</p> <p>The structure and conduct of this consultative meeting is likely to result in recommendations that will be logical/consistent.</p> <p>This Summit was a cost effective way of taking into account views on clinical nursing research priorities in the Eastern Mediterranean region (i.e. it is unlikely this could have been achieved more efficiently by an alternative method of consultation).</p>

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Was the rationale for choosing this particular format for the Summit clear and appropriate?	The Summit has been run in an unbiased way (i.e. independent of undue influences by the summit sponsors).
Was the Summit well organized and managed on a practical level?	The purposes of the Summit have been clear and transparent to the delegates.
Were the decision-making procedures used appropriately?	Do you have any other comments about the Research Summit?
Was the format of the Summit flexible and adaptable, as necessary?	
Did the Summit bring constructive media attention to the issues?	
Did the Summit meet its aims?	
Were the benefits distributed across all the stakeholders?	
Do you have any other comments about the research Summit?	
Was sufficient time allotted for small group activities?	

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Were the small group activities well run?

For this meeting was there sufficient time to cover topics?

Was the information clear?

Was the meeting well managed?

Were the decisions made (or conclusions drawn) consistent?

Was there adequate publicity?

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**Social Norms**

Where persons with a legitimate interest in the issue clearly identified?

Were all parties involved early enough to make a proper contribution?

Were participants appropriately selected from among the group of stakeholders?

Was enough effort made to get the right participants?

Was the group of participants' representative?

The participants at the Research Summit fairly represent the members of the nursing and midwifery research community affected by the issues raised in it

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Was the information available in an appropriate format, at the appropriate level of detail?

Were there enough suitable facilities and equipment to meet the needs of the Summit?

Did all participants have an opportunity to contribute to the discussion?

Did participants have an appropriate level of input into the Summit?

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<b>Perceived Behavior</b>	<p>Will the Summit contribute to improving decision-making regarding research priorities in the future?</p> <p>Will the Summit have a potential impact on future research policy?</p> <p>Will the Summit have a positive impact on the general approach to handling the issues?</p>	<p>The nature and scope of the task was well defined (i.e. I understood my role at the Summit).</p> <p>The topic of the Summit was relevant to my area of work/interests.</p> <p>The Summit provided sufficient resources in terms of time and information to enable me to take part in the discussion effectively.</p>
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Will the Summit have a positive future impact on the direction of the future research in the region?	How will you be using the information you learned from the Summit?
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Table 3.2: Definition of criteria for a successful program (Adapted from Rowe & Frewer, 2000)

<b>Criteria</b>	<b>Definition</b>
<b>Representativeness</b>	Representation of the intended population is appropriate
<b>Influence</b>	Ability of the Summit to instigate the desired change
<b>Independence</b>	Conducted in an unbiased way
<b>Early involvement</b>	Participants are involved early in the process
<b>Transparency</b>	Relevant population can clearly see what is going on
<b>Resource accessibility</b>	Appropriate resources are made available
<b>Structured decision making</b>	Objective processes were used for decision-making
<b>Cost-effectiveness</b>	The benefits were worth the cost
<b>Task definition</b>	The scope and nature of participation is clear

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For both surveys, responses were anonymous and they were distributed on the first day and collected on the last day of the Summit. The core collaborator survey sought to gain insights

into whether organizers believed that the preliminary planning activities for the Summit were effective. The participant survey was used to collect data from Summit participants regarding the success of the actual Summit and included questions as to the Summit's potential to effect change, its objective process for decision-making, and its fiscal value (cost-benefit). Open-ended questions elicited other comments about the Summit, for example, the participant survey asked how participants would use the information learned.

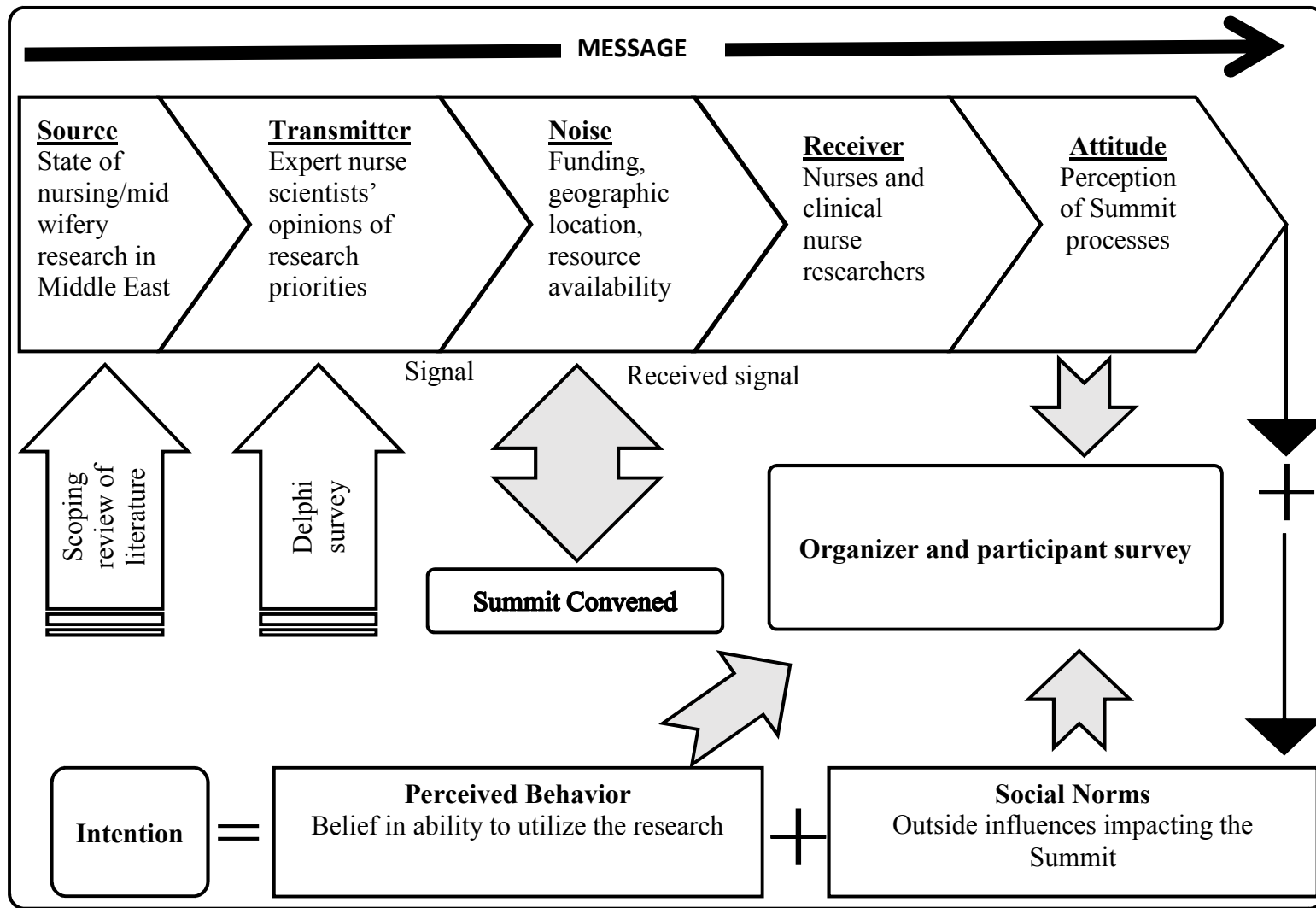


Figure 3.1: Conceptual Model for the Program Evaluation

Adapted from (Shannon, 1948) and (Aizen, 1985)

## **Results**

### **Formative Evaluation**

In total, 37 participants from 13 of the 22 countries in the Region attended, along with the 4 member project team from the USA. In addition to those who had previously participated in the Delphi survey, other participants included experts in the field including nursing faculty and deans and government representatives. The Summit began with a presentation of the aims of the project, followed by five major sessions: presentation of the results of the scoping review and Delphi survey; identification of regional gaps in nursing/midwifery knowledge and research priorities; discussion of regional barriers and proposed actions to address established research priorities; discussion of conducting research when there are complex humanitarian crises; and development of action plans and future steps. After the results of the Delphi survey were presented, participants broke into four groups to discuss the findings and determine three regional clinical research goals that they believed were achievable. These same small groups were used to facilitate discussion during each session of the Summit. After each of the small group discussions a debriefing session took place. Members of the research team took notes at each of the sessions, and these were then used to help create a final Summit report. As a result of the Summit, a number of actionable projects were developed (Table 3.3). The current status of each project is also included in the table.

Table 3.3: Actionable projects that emerged from the Eastern Mediterranean Region Summit on Clinical Nursing and Midwifery Research Priorities

<b>Summit Priority</b>	<b>Actionable Projects</b>	<b>Outcomes</b>
<b>Build capacity/ mentoring/education</b>	Publication of a peer reviewed manuscript that summarizes examples of the successful use of clinical research both locally and regionally	1. Two manuscripts describing success stories were published (Al-Touby et al., 2017; Sun et al., 2017). 2. A writing mentorship program (Writing to Improve Nursing Science, The WINS Workshop) was funded. Ten participants from Africa and Middle East were accepted and participated from Jan-July 2017.
<b>Monitor clinical nursing and midwifery research</b>	The development and updating of a database of clinical nursing and midwifery research being conducted locally and regionally	The group is currently in the process of writing a grant to support this project.
<b>Establish partnerships between nursing and midwifery clinicians and researchers</b>	The identification of the research priorities of clinical nurses across the region through the use of focus groups	A project protocol was developed with collaborators who worked through Skype and email. Each country obtained IRB and site approval locally; three countries

conducted FGDs and a manuscript is in development.

<b>Focus on areas undergoing humanitarian crisis or areas with major health disparities</b>	The identification of health disparities and needs of refugees and other groups impacted by political displacement and unrest by conducting a scoping review of nursing and midwifery research literature	Following the literature review, a collaborative project with U Jordan to assess refugee knowledge, attitudes, practices regarding prevention of sexually-transmitted infections is under development.
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*Participant surveys.* From the 37 participants, 21 surveys (56.8%) were collected. All but two respondents reported that all criteria for the Summit were met. In general, the results show that the participants agreed that the Summit was successful because the majority of respondents strongly or very strongly agreed that the Summit had met its objectives regarding with items related to task definition, representativeness, resources accessibility, structured discussion, independence, transparency, influence, early involvement, and cost-effectiveness. Individual comments indicated that participants planned to use the information learned from the Summit in a variety of ways, including informing the future research they conduct, assisting students in selecting research topics and developing local action plans. A number of respondents also commented that the Summit had been very informative and that they had benefitted from sharing experiences. Some sample comments are: “A very informative Summit that pooled nurse leaders and researchers of the Region and facilitated sharing of ideas and actions” and “High energy-

have a sense that commitment is there from participants”. Two participants responded negatively on all items.

Eight core collaborator surveys were completed. Their comments indicated the need for sustained action such as “Sustain the networking initiative over time between participants so the ultimate aims get achieved” and also positive feedback such as “Job well done, lots learnt”. Two of the core collaborators also suggested that more in-service nurses/midwives be included at future summits.

The impact of the Summit was evaluated through the progress of several of the actionable projects. Al-Touby et al. (2017) published a description of seven success stories in promoting evidence-based practice in six different EMR countries as a result of the Summit. These have led to more research being available to promote evidence-based practice and in one case led to the proposed revision to a law to acknowledge advanced practice nurses. One of the actionable projects has resulted in the planning of a research project to assess the knowledge, attitudes and practices of refugees regarding the prevention of sexually transmitted infections. A manuscript has been written to present the results of the focus group discussions with clinical nurses that identified research priorities across the region. Plans to develop the database are still underway, though the project has not progressed according to the original schedule.

## **Discussion**

Using the conceptual model that combined Shannon and Weaver’s model with the Theory of Planned Behavior (TPB) as a framework to guide this evaluation, organizer and participant opinions regarding the processes involved in the Summit, outside factors impacting the Summit, and participants’ ability to utilize the information emerging from the Summit were taken into account. The various factors that shaped the message received by participants and the

attitudes, social norms and perceived behaviors that may have impacted their intention and ability to use the information they received during the Summit are important because they may have influenced whether the Summit priorities were achieved and the actionable projects were carried out.

Overall a high level of engagement by participants was evident during the group sessions. This was then confirmed through their positive responses on the surveys and through their intended uses of the information. The results of the current evaluation are similar to those that emerged from the previous Summit held in 2015 in Nairobi, indicating that the goals for the Summit had been met and that participants were generally satisfied. Overall, the positive results indicate that nurse and midwifery experts in these regions recognized the importance of identifying clinical research priorities and comments suggest that they believed that creating sustainable networking initiatives and resources was vital.

The positive outcomes of the actionable projects lend support to TPB, in that when participants perceived the information from the Summit to be useful, did not have outside influences negatively impacting them and believed in their ability to complete the projects, those projects experienced a high level of support and engagement following the Summit. On the other hand, the delays some of the projects faced seemed to be influenced by factors likely related to social norms and perceived behavior because a lack of manpower and funding were two issues that were identified as having an impact on these projects. Such issues were not a result of the Summit itself, but were associated with external factors that influenced participants' intentions.

Although each of the projects were planned and agreed upon during the Summit, when participants returned to their own contexts there were some unanticipated barriers. For example, for the 2016 Amman Summit and the 2015 Nairobi Summit barriers such as scheduling, lack of



resources, and resistance from nurses were reported (Al-Touby, et al., 2017; Sun et al., 2017). In both studies, funding was noted as a major barrier. The two scoping reviews of the literature have uncovered a gap between the regional needs identified by nursing experts and published funded projects (Sun & Larson, 2015; Alhusaini et al., 2016), Al-Touby et al. (2017). This highlights the need to set research priorities early on and then negotiate with sources of funding so money can be allocated according to the established priorities. Sun et al. (2017) stressed the importance of strengthening collaboration and regional networks to ensure the long-term success of building a strong research culture in settings where resources are limited. The insights gained from the outcomes of these summits can be used to help ensure that project ideas developed have the required resources available. Future evaluation of such programs should assess not only the way a workshop of meeting is conducted and planned, but also the feasibility of any agreed upon actionable projects. Questions could be developed using the conceptual model in this paper as a framework, with the goal being the early identification of possible barriers.

Because the surveys were anonymous it was not possible to discern the specific reasons for the negative responses from two participants. These responses could have been due to a negative reaction to one or more specific aspects of the Summit, accompanied by response set bias, which occurs when individuals complete a survey by over-relying on one category of a Likert scale when completing a survey (Rennie, 1982). The open-ended answers from these two participants were examined to try to determine whether they were actually dissatisfied by the Summit. Neither respondent made any further comments about the Summit, but both answered the question about how they would use the information. One responded that he/she would use the information to conduct future research and assist students to select research topics while the other said he/she would develop a database and disseminate the results. Although the comments

were neither negative nor positive, they do suggest that the participants found the information from the Summit applicable. This may indicate that the respondents inadvertently reverse scored the Likert scale, choosing the negative responses rather than positive.

It is also important to note that a number of countries in the EMR are currently experiencing conflicts and humanitarian crises, so the research priorities for the Region may change as situations in these countries change. The areas most affected may see the emergence or re-emergence of certain diseases if conditions deteriorate, or other concerns may lessen if the situation improves. For that reason, nursing and midwifery experts must revisit research priorities periodically to ensure that they remain relevant.

A limitation of the project related to the standardized measurements used which were selected because they had been used in a previous Summit and provided an opportunity for comparisons to be made (Nardi, 2015). However, the instruments covered a wide range of issues, some of which the participants may not have experienced. For example, one of the statements was “The Summit was a cost effective way of taking into account views on clinical nursing and midwifery research priorities in the Eastern Mediterranean Region.” It is not likely that participants could effectively evaluate whether the Summit was cost effective. Additionally, participants were asked to describe their intentions regarding use of the information they received. While these items provide information for the organizers to determine whether the Summit met its original aims, but there is likely a difference between what people report they will do and what they actually do (Nardi, 2015). Hence, follow-up communication with participants and core collaborators to examine what was done after the Summit to identify any barriers and develop strategies to overcome them is essential.

A threat to the external validity of the results of this evaluation is that the number of participants was limited to nurse and midwifery leaders working in the EMR who may not have been representative of the wider nursing community. In fact, Summit participants themselves recommended that more clinical nurses and midwives be involved, as the decisions regarding clinical research generally emanate from problems identified by clinicians and have a direct impact on their practice. This limited attendance also means that the impact that the products of the Summit may not be generalizable. Though nurse/midwife researchers/experts may benefit from the information and projects that emerged from the Summit, it is difficult to determine through the evaluation the direct impact the Summit will have on nurse/midwife clinicians. Further, it was not possible in this project to assess the longer-term outcomes of the Summit. To evaluate the long-term success and sustainability of the Summit, a future social network analysis is underway.

## **Conclusion**

The theory-based conceptual framework and the steps used to evaluate this Summit can be utilized for future endeavors to develop research priorities and to sustain collaborative work in other regions. The experience discussed in this paper indicates that for such programs to be successful, intense cooperation is needed between various experts in the field, along with detailed planning and regular follow up meetings. Further, to accurately determine outcomes of such meetings or workshops, continued follow up regarding the progress of the actionable projects is essential. Furthermore, in ever-changing environments such as those in some countries in the EMR, it is important that identified research priorities be revisited in order to ensure that they reflect the changing needs of the region.

## CHAPTER 4: BARRIERS SCALE

### **Introduction**

This chapter includes the background information regarding barriers to clinical nursing research utilization in the Eastern Mediterranean Region (EMR), which has been defined by World Health Organization (WHO) as including the following countries: Bahrain, Kuwait, Qatar, Saudi Arabia, United Arab Emirates (UAE), Afghanistan, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco, the Sultanate of Oman (Oman), Pakistan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Palestine and Yemen (Regional Office of the Eastern Mediterranean, 2016). The chapter also includes a description of the sample, instrument, data collection method and data analysis for Aim 3 of this dissertation, which was to describe barriers and facilitators to research utilization in the EMR.

### **Background Information**

The World Health Organization (WHO) has established global standards for nursing/midwifery to ensure outcomes that (1) are based on evidence and competency, (2) promote the progressive nature of education and lifelong learning, and (3) ensure the employment of practitioners who are competent and who, by providing quality care, promote positive health outcomes in the population they serve (WHO, 2009). In 2015, Kuwait hosted the 62nd session of the WHO Regional Committee for the Eastern Mediterranean which identified a lack of clarity for the position of nursing leadership in the organizational structure of the ministries of health in Middle Eastern countries (Al Darazi, 2015), potentially limiting nurse leaders' ability to influence research utilization in clinical practice settings. Not only in ministries of health, but in every educational and clinical nursing/midwifery setting leadership efforts are needed to prepare nurses/midwives to better utilize research (Shirey, 2006). Nursing

and midwifery leadership is a crucial factor in moving research into practice, along with sufficient time for implementation and communication with nursing staff (Olsen, 2013).

Nurse and midwife leaders are positioned to create and support an organizational climate to promote the use of clinical research. The increased promotion of research utilization in practice, often embedded in the notion of evidence-based practice (EBP), provides an important opportunity to advance the role of nursing in achieving optimal health outcomes (Estabrooks, 2009). The most important rationale for implementing EBP is that it leads to higher quality of care to improve patient outcomes (Melynk, 2012). However, the use and implementation of EBP is inconsistent in many clinical settings, possibly because of the barriers that exist (Melynk, 2012). One study of registered nurses (RN) in the United States (US) found that one barrier for the implementation of EBP is nurse leader/manager resistance (Melynk, 2012). Other barriers include limited organizational budgets for training and updating databases (Hussein & Hussein, 2013), a lack of time to read and implement research (Tawfik, Mohamed, & Mohamed, 2013; Tawfik, Mohamed, & Moussa, 2014), and heavy workloads (Valizadeh & Zamanzadeh, 2003).

Nurse/midwifery leaders in EMR countries may face additional barriers to support research utilization and implementation science because cultural, social and economic norms about the education, status and the role of women are limiting (Institute of Medicine, 2011). Research utilization in nursing has been well studied in the US but has had limited focus in EMR countries, especially from the nurse/midwifery leader's perspective. Therefore, the concept of research utilization in EMR countries may benefit from further exploration because limited access to research and a perceived cultural divide may make it difficult for clinical nurses and midwives to apply research evidence in practice (Olfati et al., 2013). For these reasons, the aim of this study was to identify the perceived barriers and facilitators to research implementation

faced by EMR nurse/midwifery leaders. A further aim of the study was to determine whether two additional factors—whether the nurse leader is in an academic or other position (for example, representatives from ministries of health or a clinical setting) and the Gross Domestic Product (GDP) of the country in which they are working—were associated with those perceptions.

## **Methods**

### **Participant Sample**

The sample for this descriptive study was 107 experts in nursing/midwifery from 19 countries in the EMR who had been identified previously for a Delphi survey conducted between February and April 2016. The experts were identified using similar criteria from a previous Delphi survey conducted in Africa (Sun et al., 2015): 1) they were registered nurses holding a bachelor's degree in nursing or higher; 2) they had published research in peer-reviewed journals; 3) if applicable, the nursing and/or midwifery school with which they were affiliated had at least a master's level nursing/midwifery program; and 4) they resided within the EMR. Attendees of a nursing/midwifery research Summit held in Jordan in July 2016 (Sun et al., 2017) who were identified by local core collaborators were also invited to participate.

### **Instrument**

The instrument used for this study was a modified version of the Barriers Scale originally developed by Funk, Champagne, Wiese and Tornquist (1991) based on the theory in Rogers' (1983) Diffusion of Innovation Model in order to identify barriers to EBP. It consists of 29 items categorized into four factors: characteristics of the person adopting the change (in the field of nursing, this means the nurse), the characteristics of the organization involved, the characteristics of the innovation (in this case research and EBP), and the characteristics of the communication. This Scale was chosen as it was developed to measure perceived research barriers in nursing and

has been shown to have acceptable reliability and validity (Bayık, Uysal, Ardana, & Özkahraman, 2010), with Cronbach alpha coefficients of between 0.65 and 0.8 for the four factors (Funk et al., 1991).

For the purpose of this study, several modifications were made to the original scale. First, every item that included the term ‘nurse’ was changed to ‘nurse/midwife’. The descriptors of each score on the four-point scale were modified for clarity and each scale was assigned a score. Specifically, it was changed from ‘to no extent’ to ‘not at all’, from ‘to a little extent’ to ‘a small amount’, from ‘to a moderate extent’ to ‘a moderate amount’, and from ‘to a great extent’ to ‘a great amount’. Participants responded to each item with one of these four answers and also the option of “no opinion” was provided. To quantify these answers, each answer was assigned with a scale from 0 (not at all), 1(a small amount), 2 (a moderate amount), 3 (a great amount). The four-point scale corresponds to the extent to which a participant saw the item to be a barrier, with 0 the lowest and 3 the highest. No score was assigned for the option of ‘no opinion’.

Four items (30- 33) were added to the survey asking the respondent to list any barrier unmentioned in previous items. Item 34 requested that they list their perceived top three barriers and item 35 their top three perceived facilitators. Respondents were also asked to report their country and position, such as an academic or other position (for example, representatives from ministries of health or a clinical setting). See Appendix 3 for the adapted scale.

### **Data Collection Method**

Following approval from the Columbia University Medical Center Institutional Review Board, participants were sent by email an information sheet about the study and the modified version of the Barriers Scale using an on-line software package (Qualtrics, <https://www.qualtrics.com>). The survey was conducted using The Dillman Total Design Survey

Method to maximize the response rate (Dillman, Smyth, & Christian, 2009). Participants were asked to complete the Barriers Scale and return it by email. A reminder was sent one week after the initial email to those who had not yet responded. Participants of the Summit (n=37) who had not previously received the Barriers Scale electronically were provided with a hard copy and asked to complete it at the end of the first day of the Summit.

### **Data Analysis**

The quantitative data were analyzed using SAS software. First, descriptive statistical analyses were completed. Cronbach’s alpha coefficients were used to determine the internal consistency. One potential factor that affects could affect participants’ answers is the economic condition of the region where the participants work. I used GDP per capita as a surrogate factor for the economic condition. Based on a recent estimate of GDP per capita (based on 2016 estimate from Central Intelligence Agency), the GDP per Capita of the countries were divided into Low and High categories as shown in Table 4.1. In the linear regression model, the Low GDP category was coded as 1 and high GDP category as 0. The 19 countries of the total number of respondents were ranked and grouped into two categories as high and low GDP per capita.

Table 4.1: The GDP per capita for the countries in which participants reside

<b>Country Name</b>	<b>GDP per Capita</b>	<b>Number of Participants</b>	<b>GDP Category</b>	<b>Total Number of Participants</b>
<b>Somalia</b>	\$400.00	1		
<b>Afghanistan</b>	\$2,500.00	2	Low	43(73%)
<b>Yemen</b>	\$2,800.00	2		



<b>State of Palestine</b>	\$4,300.00	3		
<b>Sudan</b>	\$4,500.00	1		
<b>Pakistan</b>	\$4,900.00	2		
<b>Jordan</b>	\$11,100.00	13		
<b>Tunisia</b>	\$11,700.00	4		
<b>Egypt</b>	\$12,100.00	4		
<b>Iraq</b>	\$16,500.00	2		
<b>Iran</b>	\$18,100.00	2		
<b>Libya</b>	\$14,200.00	1		
<b>Lebanon</b>	\$18,500.00	6		
<b>Oman</b>	\$43,700.00	5		
<b>Bahrain</b>	\$50,300.00	5		
<b>Saudi Arabia</b>	\$54,100.00	5	High	16(27%)
<b>Qatar</b>	\$127,700.00	1		

Participants were also dichotomized according to their professional position, either academic or from another organization. Because participation in a research summit may have had an influence on attitudes toward research, I also explored whether completing the survey before or after the Summit led to a difference in the perception of the barriers. For the purpose of answering Aim 3 of this dissertation, the following steps guided the data analysis. First, Cronbach's alpha coefficient was calculated to determine the internal consistency of survey

items. Then each participant’s score across all items was summarized using the average score of each item, with unanswered or “no opinion” answers excluded.

Sub-aim 3.1: Determine the extent to which nurses consider each item a barrier, for each item (1-29) the proportion of nurses replying with either a score of 3 to 4 was summarized, indicating that they viewed the item as a strong barrier. The percentage of nurses who rated the barrier as being moderate or great was also calculated. For each barrier, the percentage of nurses who replied moderate or great amount was calculated and ranked, Table 4.5.

Sub-aim 3.2: Determine whether the GDP of the country, the position of the nurse (academic or other), or completing the survey before or after the Summit was associated with differences in the responses. To explore if a participant’s perception of barriers to utilizing research was related to the participant’s position (academic or other) or country, as described previously, linear regression was used, with the outcome being the average score of each participant on the Barriers Scale and the participant’s country income GDP and professional position (academic or other) and the effect of the Summit attendance (before/after) as predictors. For participant  $i$ , his/her score was modeled using his/her position, the level of income of his/her country, and whether he/she finished the questionnaire before or after the summit:

$$y_i = \beta_0 + \beta_1 X_{i_{LowGDP}} + \beta_2 X_{i_{Academia}} + \beta_3 X_{i_{Summit}}$$

In the model,  $X_{i_{LowGDP}} = 1$  if the participant came from a low GDP country, and  $X_{i_{LowGDP}} = 0$  if the participant came from a high GDP country;  $X_{i_{Academia}} = 1$  if the participant came from academia, and  $X_{i_{Academia}} = 0$  if the participant came from other positions; and  $X_{i_{Summit}} = 1$  if the participant completed the survey after the Summit, and  $X_{i_{Summit}} = 0$  if the participant completed the survey before the Summit.  $\beta_3$  is the mean difference of the score between nurses who completed it after and before the Summit when controlling for the other two

variables at the same level. However; since the sample sizes for the ‘non-academic’ and ‘before Summit’ categories were too small to include, it was only possible to only examine the relationship between GDP and scores on the barrier scale, so “GDP” was the only covariate for the final analysis. Because of the unbalanced sample size between the two GDP groups and the possible violation of the normal distribution assumption of the barrier scores in the two groups, the Mann–Whitney U test was performed to compare the barrier scores. As a secondary analysis, another linear regression was conducted using GDP per capita divided by ten thousand dollars as a continuous predictor to predict the average barrier scores. The result showed a consistent conclusion with the analysis that used GDP as a categorical predictor.

The three barriers perceived by respondents as the most important were also summarized. For each barrier item, the frequency with which it was chosen was calculated and the rank order of barriers to research utilization was identified. To assess the reported factors that facilitate research utilization, the nurses’ answers to factors that might facilitate their use of research results were summarized in a narrative through content analysis.

## **Results**

Fifty-nine questionnaires were completed (45.8% response rate, 59/107). Among the 59 participants, 43 (73%) participants came from a low GDP country and 43 (73%) of the participants finished the questionnaire after the Summit. There were 44 (75%) participants who held an academic position such as dean or professor in a university. Barrier score means for each category are summarized in Table 4.2, and the results of the linear regression are shown in Table 4.3.

Table 4.2: Average mean barrier scores for each category and for all respondents

GDP Level	Summit	Position		All
		Non-Academic	Academic	
High	Before	2.07 (n=1)	2.07 (n=2)	2.07 (n=3)
	After	1.54 (n=6)	1.78 (n=7)	1.67 (n=13)
Low	Before	2.28 (n=2)	2.11 (n=11)	2.13 (n=13)
	After	2.29 (n=6)	2.03 (n=24)	2.08 (n=30)
<b>Total</b>		15	44	59

Table 4.3: Linear regression estimation of mean barrier scores using all predictors

<i>Variables</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value(at 0.05 sig)</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
<b>Intercept</b>	1.885	0.157	0.000	1.570	2.201
<b>Low GDP</b>	0.357	0.121	0.005	0.114	0.600
<b>Academia</b>	-0.130	0.118	0.275	-0.365	0.106
<b>Summit</b>	-0.068	0.123	0.584	-0.315	0.179

The estimated linear relationship between the average score of barrier and the GDP, Summit and position is:

$$y_i = 1.885 + 0.357X_{iLowGDP} - 0.130X_{iAcademia} - 0.068X_{iSummit}$$

in which only the intercept and the effect of GDP level were significant with a 0.05 significance level. The intercept of the linear regression was 1.885, which is the average barrier score for the

reference group, which was from a high GDP country, was a non-academic and had finished the questionnaire before the Summit. The positive coefficient of GDP level, 0.357, means that the average barrier score for participants coming from a poor country was 0.357 more compared with the participants coming from a rich country. The negative coefficient -0.130 for “coming from academia” indicates a slightly lower mean barrier score for participants coming from academia compared with those coming from other positions, but the difference is not significant. The negative coefficient -0.068 for “after the Summit” indicates a slightly lower mean barrier score for participants who finished the questionnaire after the Summit compared with those who finished before the Summit, but the difference is also not significant. These two variables, whether or not the participant came from an academic position or whether or not they had attended the Summit show no significant association with how the participant perceived the barriers listed in the questionnaire. Because the small sample size noted on Table 4.2 for the “non-academic” and “before summit” categories may have caused an unstable estimation, position and the effect of the Summit were removed from the model and the regression was run again.

The cohort had 16 respondents from a relatively high GDP country with an average barrier score of 1.742 and 43 respondents from a low GDP country with an average barrier score of 2.097. The regression result using GDP as the covariate is summarized below in Table 4.4.

Table 4.4: Linear regression estimation of mean barrier scores using GDP

<i>Variables</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value(at 0.05 sig)</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
<b>Intercept</b>	1.742	0.099	0.000	1.544	1.940
<b>Low GDP</b>	0.355	0.116	0.003	0.123	0.587

The estimated linear relationship between the average score of barrier and the GDP, was:

$$y_i = 1.742 + 0.355X_{i_{LowGDP}}$$

in which the effect of the GDP level is significant with a 0.05 significance level. The intercept of the linear regression was 1.742, which is the average barrier score for the reference group, which was from a high GDP country. The positive coefficient of the GDP level, 0.355, means that the average barrier score for participants coming from a low GDP country was 0.355 more compared to the participants coming from a high GDP country.

For the Mann-Whitney U test, the two-tailed Z-Score was 2.64 and the p-value was .008. Both the regression and the Mann–Whitney U test confirmed that GDP was significantly associated with the barrier scores; respondents from higher GDP countries had lower barrier scores compared with those from low GDP countries. Table 4.5 illustrates the ranking of the 29 Barriers Scale items validates this result. The top three Barrier Scale items are question numbers 13, 28, and 29. The top five Barrier Scale items were rated as moderate to strong by more than half of the respondents.

Table 4.5: Ranking of Barriers to Research Utilization Scale Items: Moderate to Strong

<b>Question No.</b>	<b>Barrier</b>	<b>No. of Reply</b>	<b>Mean</b>	<b>S.D.</b>	<b>Moderate to Strong</b>	<b>Percent</b>
<b>13</b>	<b>The nurse/midwife does not feel she/he has enough authority to change patient care procedures</b>	58	2.60	0.75	42	72.4%
<b>28</b>	<b>The nurse/midwife does not feel capable of evaluating the quality of the research</b>	59	2.42	0.75	34	57.6%

29	<b>There is insufficient time on the job to implement new ideas</b>	59	2.39	0.83	34	57.6%
15	<b>The nurse/midwife is isolated from knowledgeable colleagues with whom to discuss the research</b>	57	2.30	0.91	31	54.4%
9	<b>The nurse/midwife feels the benefits of changing practice will be minimal</b>	58	2.29	0.88	29	50.0%
25	<b>Other staff are not supportive of implementation</b>	59	2.34	0.76	29	49.2%
7	<b>The nurse/midwife does not have time to read research</b>	59	2.27	0.81	27	45.8%
17	<b>Research reports/articles are not published fast enough</b>	58	2.16	0.95	27	46.6%
26	<b>The nurse/midwife is unwilling to change/try new ideas</b>	59	2.20	0.91	27	45.8%
16	<b>The nurse/midwife sees little benefit for self</b>	58	2.10	0.97	26	44.8%
18	<b>Physicians will not cooperate with implementation</b>	57	2.12	0.89	23	40.4%
21	<b>There is not a documented need to change practice</b>	57	1.96	0.94	21	36.8%

12	<b>The relevant literature is not compiled in one place</b>	58	1.91	0.98	20	34.5%
5	<b>The nurse/midwife is unaware of the research</b>	57	1.96	0.91	19	33.3%
6	<b>The facilities are inadequate for implementation</b>	56	1.96	0.91	19	33.9%
19	<b>Administration will not allow implementation</b>	56	2.02	0.90	19	33.9%
14	<b>The nurse/midwife feels results are not generalizable to own setting</b>	55	1.87	0.98	18	32.7%
27	<b>The amount of research information is overwhelming</b>	58	1.91	0.90	17	29.3%
2	<b>Implications for practice are not made clear</b>	59	1.85	0.91	16	27.1%
8	<b>The research has not been replicated</b>	56	1.86	0.94	16	28.6%
20	<b>The nurse/midwife does not see the value of research for practice</b>	56	1.91	0.86	16	28.6%
24	<b>The research is not reported clearly and readably</b>	57	1.95	0.79	16	28.1%
1	<b>Research reports/articles are not readily available</b>	58	1.64	1.02	15	25.9%



<b>10</b>	<b>The nurse/midwife is uncertain whether to believe the results of the research</b>	52	1.77	0.92	14	26.9%
<b>3</b>	<b>Statistical analyses are not understandable</b>	59	1.81	0.86	13	22.0%
<b>4</b>	<b>The research is not relevant to the nurse's or midwife's practice</b>	58	1.43	1.09	13	22.4%
<b>11</b>	<b>The research has methodological inadequacies</b>	53	1.72	0.86	11	20.8%
<b>23</b>	<b>The literature reports conflicting results</b>	54	1.65	0.91	11	20.4%
<b>22</b>	<b>The conclusions drawn from the research are not justified</b>	55	1.40	0.87	7	12.7%

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In previous analysis, the surrogate predictor GDP was dichotomized into two categories: high and low (Table 4.1). As a secondary analysis, I used the GDP per capita (Table 4.1, column 3) as a continuous predictor and conducted another linear regression. Because using the original scale with one dollar as the unit gave an extremely small coefficient of the linear regression, which was the score changed by 1-dollar unit and also not meaningful, I rescaled the GDP per capita by dividing it by 10000. The new predictor was GDP per capita in ten thousand dollars as one unit. The average value of this predictor for the cohort was 2.27. The result is shown in Table 4.4.

Table 4.6: Linear regression estimation of mean barrier scores using GDP as a continuous predictor

<i>Variables</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value(at 0.05 sig)</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
<b>Intercept</b>	2.126	0.076	0.000***	1.9734	2.2785
<b>GDP(in 10k\$)</b>	-0.055	0.024	0.025**	-0.103	-0.007

The estimated linear relationship between the average score of the barrier and the GDP in thousands was:

$$y_i = 2.1259 - 0.055GDP_i$$

Figure 4.1 shows the scatter plot between the predictor and the outcome, with the red dots indicating low GDP observations, and black dots indicating high GDP observations. The line is fitted from the linear regression. A declining trend of average barrier score with the GDP per capita is shown. The result shows that with a 10K higher GDP, the average barrier score decreased by 0.055. The overall conclusion is consistent with the first regression model. The intercept is quite different from the previous result and the R-square was 0.085, which is much smaller than the previous regression. That means the first model explains more variance of the outcome comparing with the second model. This may be caused by the significant variance of GDP across different countries.

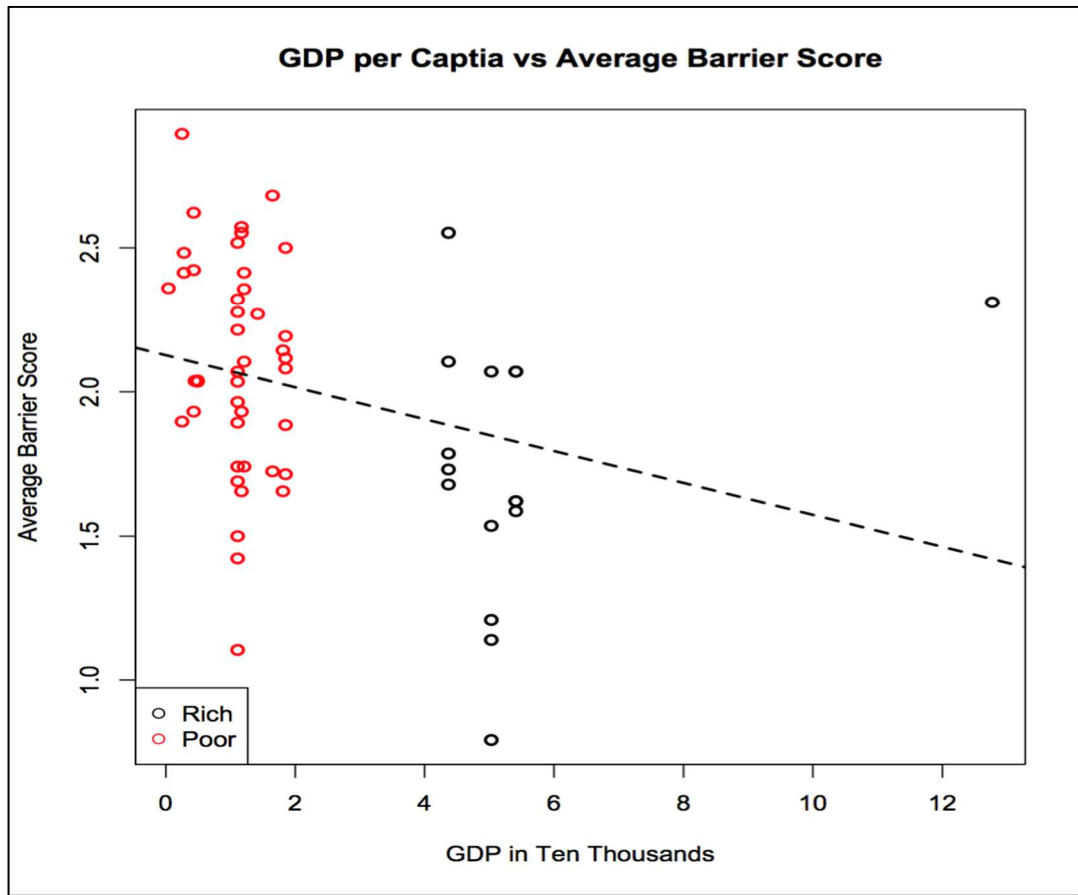


Figure 4.1: The relationship between the average barrier score and the GDP in \$10K of the country where the participant comes from

*Barriers.*

The main barriers identified by respondents could be placed into four broad categories: lack of funding and resources, lack of support, lack of training and lack of interest. The most frequently mentioned barrier was lack of funding, closely followed by lack of resources, including research laboratories and libraries, access to the scientific literature, and an absence of tools to evaluate the impact that evidence based practice has on nursing/midwifery. One participant stated, “Evidence for changing practice is not collected in one place for ease of access of nurses”. Others reported that even if they did have access to published literature, there were

limited studies available for their specific Region. Another resource that participants claimed was lack of time.

In addition to the lack of resources, a range of barriers associated with a lack of institutional support was also reported, including administrative support and available mentors. One participant reported that nursing directors were not keen on implementing research while one claimed there was a lack of policies supporting research utilization. Lack of cooperation was a barrier often mentioned, with participants reporting that it was difficult for professionals from different areas such as academic and clinical settings to work together. Several participants reported institutional culture as a barrier, with four respondents claiming that their organization did not have a research culture and several others mentioning that there was no culture of informing nurses/midwives about the importance of using research to inform their practice. A lack of institutional policies regarding the use of research and opportunities to disseminate the research findings were also mentioned.

A lack of orientation programs to help nurses/midwives carry out research was mentioned, along with a lack of training regarding how to utilize research. In general, respondents reported that the weak research skills of nurses required training in critiquing and conducting research. One participant stated that, “systematic continuous professional development (compulsory)” was not in place.

A lack of interest or motivation was also reported, with one participant stating, “Individual development motivations are not there for nurses/ midwives”. A few of the participants mentioned that there was a lack of perceived relevance of research to clinical settings.

*Facilitators.*

The main facilitators to research utilization that participants identified were improving support and research culture, investing in resources, and providing education and training. One facilitator was to improve management and administrative support. A specific suggestion was to provide nurses/midwives with the time they need to read the latest research studies. Others mentioned that research is not only a skill, but also a culture, so a culture where research is valued must be created and awareness should be raised about the importance of research in clinical settings. Some suggested the formation of research clubs to provide an opportunity for interested nurses/midwives to discuss research and methodologies or informative sessions organized by nursing/midwifery leaders to allow for the dissemination of research. Support by decision makers to disseminate research was another facilitator. Cooperation between nurses/midwives and other staff members and nurses/midwives and academics was also mentioned along with the importance of institutions promoting professional development and linking research to promotion and award opportunities while ensuring nurses/midwives are aware of such initiatives. One specific suggestion was that authors include implications for practice as part of their research articles.

The resource that was often mentioned was access to journals and research articles. The importance of having this information accessible in one place was also stressed. Having both financial and legal resources available was another facilitator.

Education and training was the facilitator mentioned most often. In general, building the capacity of nurses was seen as a major facilitator. Several participants mentioned the need for training on using and conducting research needs to start at the undergraduate level, while nurses/midwives are still in their initial training. One also claimed that undergraduate students need to understand the benefits of using clinical research. Mentorship and training programs

were also seen as important. One specific facilitator from a participant was “regular and continuous professional development for nurses simplifying and emphasizing the importance of evidence based practice and improvement of practice”. Others recommended various types of training on research methodology, including pre- and in-service training and post-graduate studies.

## **Discussion**

Existing research is consistent with the finding that a lack of various resources is one of the main barriers. Hussein and Hussein (2013) found limited organizational budgets for training and updating databases to be a major barrier for nurses in Egypt while Tawfik et al. (2013) and Valizazeh and Zamanzadeh (2003) found lack of time to read and implement research and heavy workloads to be barriers for nurses in Iran. In a systematic review of 63 Barriers Scale studies, lack of time, lack of ability to understand statistical analysis, and resources not being located in one place were three of the most frequently reported barriers (Kajermo et al., 2010). This is supported by the findings of the current study. Another barrier that arose in this study was the lack of Region-specific research. This highlights the need for more clinical studies to be carried out in the EMR so that nurses/midwives consider research to be more relevant to their practice.

The finding regarding lack of institutional support is supported by MeIynk’s (2012) study of registered nurses (RN) in the United States (US) that reported nurse leader/manager resistance to be a barrier to nurses utilizing research. Institutions need to work to develop a culture that supports research utilization, which begins with ensuring management and administrators are aware of the benefits that research utilization and providing education to those individuals as well as nurses. Furthermore, policies need to be developed that clarify how research should be used. The facilitators identified by participants also provide some insight into the steps

institutions can take to develop cultures that promote research. These may include providing nurses/midwives with opportunities for professional development, developing in-house programs that provide mentors and opportunities to discuss research, and providing incentives for nurses/midwives to utilize and conduct research.

A further facilitator was for nurses/midwives to become aware of the benefits of utilizing research as undergraduate students. Rogers (as cited in Stichler, Fields, Kim, & Brown, 2011) also argued that the benefits of research utilization need to be clear to professionals in clinical settings and that they may be influenced by what they learned in their basic education. He claims that because the emphasis on research utilization often occurs once nurses are already practicing, faculty members in nursing/midwife education programs may not recognize that teaching students how to utilize research is useful. This indicates the need to also reinforce among nurse/midwife educators the importance of research utilization.

The current study adds to existing knowledge because it investigated the correlation between the existence of barriers and the GDP of the country in which nurses and midwives worked, with nurses/midwives from countries with low GDPs being more likely to report barriers. Because the main barriers reported were resources and education, this correlation is understandable. Nurses/midwives working in countries with low GDPs probably have less access to funding and the other resources such as databases and libraries. Furthermore, they may have less access to various educational opportunities that could help them better utilize and carry out research. The factor of time may also be a more significant barrier to these nurses as they may be more heavily impacted by nursing/midwife shortages and have a greater nurse/midwife to patient ratio. Careful allocation and utilization of existing resources is key to overcoming the barriers experienced by nurses/midwives working in countries with low GDPs.

### *Limitations*

This study has a number of limitations that need to be considered. For example, although data were collected for country GDP and professional position, data on other potential covariates such as age, level of education and length of time in the position were not collected. Such variables may have had an impact on the results. Furthermore, the sample size was small and focused on those involved with a specific project, thus limiting the potential to conduct multivariate analyses and generalizability of the findings to other contexts.

There was also a low response rate to the survey (45.8%, n= 59/107). In addition, only two follow-up reminder email were sent so perhaps rates could have been improved by sending at least one further reminder. In addition, contacting those who did not respond to the emails by phone could have improved the response rate or an incentive could have been offered for anyone who completes the survey. For those who received the survey during the Summit, announcements could have been made to remind them to return it. Perhaps the survey could have been distributed and collected during a particular Summit session. Changes to the layout and length of the survey could also have improved response rates if those asked to participate found it difficult to read or too long.

### **Conclusion**

Results of this research indicate that the main barriers to research utilization can be grouped into the four categories: lack of funding and resources, lack of support, lack of training and lack of interest. The main facilitators included improving support and research culture, investing in resources, and providing education and training. Further, perceived barriers increased for nurses/midwives working in countries with low GDPs.



These findings suggest that there is a need for the importance of research utilization to be a focus of nurse/midwife education from an early stage so that these students are aware of the need as they enter the clinical setting. Furthermore, continued training and education is required to ensure that nurses and midwives build the skills needed to effectively utilize research. Along with the education of nurses and midwives, more region-specific research is needed. This requires ensuring that those working in any region have the training and opportunities needed to produce quality research that can inform practice. This is particularly important in countries with low GDPs, where resource and time limitations may be significant barriers to nurses/midwives utilizing research.

## CHAPTER 5: CONCLUSION

This chapter provides a synthesis of the findings of this dissertation, along with a discussion of the implications and gaps. It also provides recommendations for future research.

### **Background**

The Eastern Mediterranean Region (EMR) is diverse in regards to its political, social, economic and health indicators with complex humanitarian emergency situations impacting some countries. Furthermore, the burden of diseases resulting from a number of communicable, newborn, nutritional and maternal conditions have been successfully reduced while other disease rates such as diabetes and heart disease have increased (WHO, 2012). The ever-changing health landscape of the Region means that nurses and midwives require ongoing development regarding their knowledge and skills and one approach is to increase access to evidence produced by research conducted in the Region targeting the needs of the populations they serve.

This dissertation was part of a large multi-regional study that sought to build a network of midwifery and nurse researchers, identify regional priorities for nursing and midwifery research, develop strategies to address any gaps between existing research and the identified priorities, and devise a plan to implement the strategies. The chapters of the current dissertation focused on the project that took place in the EMR. There were three aims of the study, each addressed in a separate chapter. The aims and findings are summarized in the following section.

### **Summary of Findings**

Chapter two was a scoping review of the peer-reviewed clinical nursing and midwifery literature conducted in the EMR. The aim was to assess the current state of clinical nursing and midwifery research in the Eastern Mediterranean Region. The findings showed that the topics researched most frequently were related to maternal child health, women's health, mental health,

patient experience including patient satisfaction, health belief/health behavior and cancer. This indicates that although non-communicable diseases are becoming more prevalent in the EMR, such diseases were still not the main focus of the research. Furthermore, only ten of the 22 countries in the Region were the focus of clinical studies and most focused on were published from Jordan, Iran and Lebanon (n=106, 58 and 35 respectively). Thus, a major gap in existing nursing and midwifery research in the EMR was noted, with clinical nursing and midwifery research targeting a limited number of issues and being primarily published from a few countries in the region.

The aim of chapter 3 was to conduct a program evaluation of a Research Summit that identified clinical nursing and midwifery research priorities in the Eastern Mediterranean Region and developed an action plan. The chapter summarized a formal program evaluation of a Research Summit that was held in Jordan and evaluated the extent to which the Summit met its initial aims using two survey tools adapted from Rowe, Marsh and Frewer (2004). The positive impact of the Summit could be determined by both the positive results of the surveys and the completion of the actionable projects that were carried out as a result of the Summit, including the publication of two manuscripts and the development of mentorship programs, a database and project protocols. Although it was not possible in this project to assess the longer term outcomes of the Summit, doing so was deemed vital and a future social network analysis is underway. A limitation of the study was the small and focused sample size and the response rate just over 50% which may have introduced a non-response bias, so ways to improve response rates should be considered for any future Summits.

Chapter four aimed to determine the extent to which nurses consider each item on the Barriers Scale a barrier and whether the GDP of the country, the position of the nurse (academic

or other), or completing the survey before or after the Summit was associated with differences in the responses. It presented the findings and identified perceived barriers and facilitators to utilizing research in the EMR. Gross domestic product (GDP) was significantly impact associated with the extent to which participants reported barriers to research utilization, with participants from low GDP countries experiencing the barriers to a greater extent. The main barriers could be placed into four broad categories of lack of funding and resources, lack of support, lack of interest, and lack of training; the main facilitators were placed into the categories of improving support and research culture, resources, and education and training.

### **Implications**

These findings have a number of implications for consideration. The first is the importance of nursing/midwife leaders to ensure that adequate Region-specific research is conducted. This requires developing the research skills of nurse/midwife researchers and supporting the dissemination of their research along with ensuring that they have adequate time and resources. One way to accomplish this may be the establishment of local networks where nurses/midwives can share resources, disseminate findings, and provide mentorship. The findings of this dissertation also support Sun et al.'s (2017) claim regarding the importance of strengthening collaboration and regional networks to ensure the long-term success of building a strong research culture. Furthermore, as a lack of institutional level support was identified as a major barrier, processes should be implemented that provide clarity regarding practical, legal and ethical issues that may arise when conducting clinical research.

Nursing/midwifery educators in EMR countries also have a role to play and need to ensure that undergraduate programs develop not only clinical skills, but also research skills. Iran, Jordan and Lebanon, where the majority of studies in the review were found to take place, have

all moved to improve nursing education and offer Masters and PhD programs. This indicates that developing research skills and ensuring nurses/midwives have opportunities for advanced levels of education does lead to an increase in clinical studies being carried out. Furthermore, due to war and humanitarian crises in parts of the EMR, research priorities need to be continually revisited. This is particularly difficult when many of the affected areas also have low GDPs. Research committees need to be established to regularly review the literature being conducted in the Region and identify gaps between the topics that are being researched and what is needed. They can then direct nurse/midwifery researchers so that the limited human resources can be best utilized.

Upon examining the situation for nurses/midwives in the EMR, one issue that emerged is a lack of an overarching professional body to promote nursing/midwifery research. The discussion groups and committees that emerged from the Summit were a beginning; however, a regional professional organization similar to the American Association College of Nursing is needed. The organization could play a pivotal role in the Region, not only promoting research, but also providing input into the standardization of the curriculum across nursing schools and establishing a training blueprint for in-service nurses. They could also liaise with the National Library of Medicine to lobby for nurse/midwife access to databases and other resources. Once access is provided, expert teams of nurses/midwives could be created that utilize evidence based practice to update outdated hospital protocols. This team could also provide research training to nurses so evidence based practice could also be used to benefit clinical practice.

In some countries in the Middle East, providing training is not enough. What is required is an entire change in the way the professions of nursing/midwifery are viewed, with many people seeing them as feminine and low class professions. Because of this, countries such as

Saudi Arabia and the UAE rely heavily on an expatriate population of nurses. These nurses generally only stay a few years before moving to another country, so much of the benefit of allocating resources to train them could be lost. In order to maximize the benefits of training a larger local workforce is required. The organization that is created could also be used to establish innovative ways of marketing the professions to high achieving high school students. This could include school visits to explain the various career paths open to nurses and scholarship opportunities to study both in the country and abroad.

In Saudi Arabia as one example, the oversight of most of the institutions offering nursing qualifications was transferred from the Ministry of Health (MoH) to the Ministry of Higher Education (MoHE), with the aim of improving nursing education (AlMalki, FitzGerald, & Clark 2011b). However, several other governmental agencies also provide nursing programs including the Medical Services of Army Forces, the National Guard Health Affairs, the Prince Sultan Cardiac Center and the King Faisal Specialist Hospital and Research Center. These programs provide diplomas in nursing and target male and female high school students (AlMalki et al., 2011b). Furthermore, recent figures indicate that 67% of the Saudi nursing workforce hold diplomas from health institutes, 30% hold associate degrees, and only 3% have bachelor's degrees (Abu-Zinadah, as cited in Aldossary et al., 2008). This indicates the need for regulation and clear levels to be set so that nurses perform duties suitable to their level of training (AlMalki et al., 2011b). Pathways for advancing through the various levels should also be established.

A professional board that may be key to advancing the profession in Saudi Arabia has been established. In 2002 the Scientific Nursing Board (SNB) was established to provide professional development, accreditation and regeneration in the country and it now provides professional development, registration, exams and accreditation for nurses who continue their

education (AlMalki et al., 2011). However, most programs are only available in urban areas. Furthermore, because the SNB works under Saudi Committee for Health Specialists (SCFHS), its role is limited and there is a need for greater independence in order for it to better serve nursing professionals (AlMalki et al., 2011). It is recommended that the SNB be moved out from under the umbrella of SCFHS and that a review takes place to determine future areas of focus, for example the standardization of curriculum across nursing education providers and distinct levels of duties and responsibilities based on nurses' educational backgrounds and training. Furthermore, members need to seek ways to expand the availability of training and professional development opportunities to nurses/midwives working in rural areas.

The evaluation of the Summit in Jordan indicated the need to include more clinical nurses and midwives. This has implications for planning future research Summits and organizing focus groups such as the ones being organized for the actionable projects. As nurses/midwives are dealing directly with patients on a daily basis, they are well placed to provide a unique perspective on what clinical research would be most useful for the Region. Thus, their voices should be included in the discussions. Furthermore, because of regional instability and visa issues, representatives were not present from every country in the Region.

### **Future Research**

This dissertation investigated nursing/midwifery clinical research priorities in the EMR and the findings may not be generalizable to other settings. Research specific to other regions is needed to identify their specific needs. This includes systematic reviews of existing literature in specific regions and. Surveys of barriers and facilitators to research utilization in those regions so that research priorities can be identified and strategies can be developed.

First, follow up research is needed regarding the long-term outcomes of the actionable projects developed as a result of the Summit in Jordan. In regards to the EMR, ongoing research identifying changes in research priorities for the Region is also needed as a number of the 22 countries are currently in a state of flux due to war and humanitarian crises. Research is also required to determine whether the higher level of education being achieved in some EMR countries such as Saudi Arabia and the United Arab Emirates, has resulted in more clinical research being conducted. Furthermore, because of the diversity of the countries in the Region, country-specific research is also required, particularly in those countries that have seen major political, economic and/or social change as they may have unique needs.



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Appendix 1: Published Manuscript

**<http://www.thejhs.org/article.asp?issn=2468-6360;year=2016;volume=4;issue=4;spage=238;epage=245;aualast=Alhusaini;type=3>**

## Appendix 2: Complete Search Strategy

### 1. Embase Search Results – Imported to Endnote 708

#### A. Adding “Clinical Nursing Research” to the first search (315 results)

<input type="checkbox"/>	#20	#18 AND #19	315
<input type="checkbox"/>	#19	#1 OR #2	49,919
<input type="checkbox"/>	#18	#16 OR #17	197,107
<input type="checkbox"/>	#17	#6 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14	122,020
<input type="checkbox"/>	#16	#3 NOT #15	80,878
<input type="checkbox"/>	#15	#4 OR #5 OR #7	351,050
<input type="checkbox"/>	#14	'morocco'/exp OR 'morocco' AND ((arabic)/lim OR (english)/lim)	13,751
<input type="checkbox"/>	#13	'tunisia'/exp OR 'tunisia' AND ((arabic)/lim OR (english)/lim)	19,000
<input type="checkbox"/>	#12	'somalia'/exp OR 'somalia' AND ((arabic)/lim OR (english)/lim)	1,596
<input type="checkbox"/>	#11	'djibouti'/exp OR 'djibouti' AND ((arabic)/lim OR (english)/lim)	292
<input type="checkbox"/>	#10	'sudan'/exp OR 'sudan'	11,175
<input type="checkbox"/>	#9	'pakistan'/exp OR 'pakistan'	65,200
<input type="checkbox"/>	#8	'afghanistan'/exp OR 'afghanistan' AND ((arabic)/lim OR (english)/lim)	5,413
<input type="checkbox"/>	#7	'turkey (republic)'/exp OR 'turkey (republic)'	27,214
<input type="checkbox"/>	#6	'palestine'/exp OR 'palestine'	2,765
<input type="checkbox"/>	#5	'israel'/exp OR 'israel'	309,050
<input type="checkbox"/>	#4	'cyprus'/exp OR 'cyprus'	6,229
<input type="checkbox"/>	#3	'middle east'/exp OR 'middle east' AND ((arabic)/lim OR (english)/lim)	124,813
<input type="checkbox"/>	#2	'clinical nursing research'/exp OR 'clinical nursing research' AND ((arabic)/lim OR (english)/lim)	4,712
<input type="checkbox"/>	#1	'nursing research'/exp OR 'nursing research' AND ((arabic)/lim OR (english)/lim)	49,361

#### B. The Second Search, after adding “Midwife” to the search terms, (393 results)

Embase Session Results

.....

No. Query Results	Results
#21 #17 AND #19 AND ([Arabic]/lim OR [English]/lim) AND [humans]/lim AND [abstracts]/lim AND [2000-2015]/py	393
#20 #17 AND #19	590
#19 #1 OR #18	37,271
#18 'midwife'/exp OR 'midwife'	32,587
#17 #15 OR #16	196,289
#16 #5 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13	121,512
#15 #2 NOT #14	80,549
#14 #3 OR #4 OR #6	350,251
#13 'morocco'/exp OR 'morocco' AND ([Arabic]/lim OR [English]/lim)	13,652
#12 'Tunisia'/exp OR 'Tunisia' AND ([Arabic]/lim OR [English]/lim)	20,382
#11 'Somalia'/exp OR 'Somalia' AND ([Arabic]/lim OR [English]/lim)	1,638
#10 'Djibouti'/exp OR 'Djibouti' AND ([Arabic]/lim OR [English]/lim)	305
#9 'Sudan'/exp OR 'Sudan'	11,501
#8 'Pakistan'/exp OR 'Pakistan'	68,451
#7 'Afghanistan'/exp OR 'Afghanistan' AND ([Arabic]/lim OR [English]/lim)	5,690
#6 'turkey (republic)'/exp OR 'turkey (republic)'	27,214
#5 'Palestine'/exp OR 'Palestine'	2,947
#4 'Israel'/exp OR 'Israel'	316,564

#3 'Cyprus'/exp OR 'Cyprus' 6,629

#2 Middle East'/exp OR 'middle east' AND ([Arabic]/lim OR [English]/lim) 129,419

#1 'clinical nursing research'/exp OR 'clinical nursing research' 4,762  
AND ([Arabic]/lim OR [English]/lim)

## **2. Pub Med Search Results – Imported to Endnote 78**

### **A. Adding “Clinical Nursing Research” to the first search terms (34 results)**

(((((("Djibouti"[Mesh] OR "Morocco"[Mesh]) OR "Tunisia"[Mesh]) OR "Somalia"[Mesh]) OR "Sudan"[Mesh]) OR "Pakistan"[Mesh]) OR (("Middle East"[Mesh] NOT "Israel"[Mesh]) NOT "Turkey"[Mesh])) AND ("Nursing Research"[Mesh:noexp] OR "Clinical Nursing Research"[Mesh]) AND (hasabstract[text] AND ("2000/01/01"[PDAT] : "2015/12/31"[PDAT]) AND (English[lang] OR Arabic[lang])))

### **B. The Second Search, after adding “Midwife” to the search terms, (44 results)**

((("middle east\*" OR Bahrain OR Kuwait OR Qatar OR Saudi Arabia OR "United Arab Emirates" OR UAE OR Afghanistan OR Djibouti OR Egypt OR Iran OR Iraq OR Jordan OR Lebanon OR "Libyan Arab Jamahiriya" OR Libya OR Morocco OR Oman OR Pakistan OR Somalia OR Sudan OR "Syrian Arab Republic" OR Syria OR Tunisia OR Palestine OR Yemen) AND (((((English[Language]) OR Arabic[Language]) AND ("2000"[Date - Publication] : "3000"[Date - Publication])) AND (nurs\* OR midwif\* OR midwiv\*) AND clinical research[MeSH Major Topic]))

## **3. CINAHL/ EBSCO Search Results – Imported to Endnote 7**

### **A. Adding “Clinical Nursing Research” to the first search (3 results)**

<input type="checkbox"/> Select / deselect all		<input type="button" value="Search with AND"/>	<input type="button" value="Search with OR"/>	<input type="button" value="Delete Searches"/>	<input type="button" value="Refresh Search Results"/>
Search ID#	Search Terms	Search Options	Actions		
<input type="checkbox"/> S10	S6 AND S7	Limiters - Published Date: 20000101-20151231; Any Author is Nurse; Language: English  Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S9	S6 AND S7	Limiters - Published Date: 20050101-20151231; Peer Reviewed; Any Author is Nurse; Language: English  Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S8	S6 AND S7	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S7	S3 OR S4 OR S5	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S6	S1 OR S2	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S5	(MH "Djibouti") OR (MH "Somalia") OR (MH "Sudan")	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S4	(MH "Egypt") OR (MH "Libya") OR (MH "Morocco") OR (MH "Tunisia")	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S3	(MH "Afghanistan") OR (MH "Bahrain") OR (MH "Iran") OR (MH "Iraq") OR (MH "Jordan") OR (MH "Kuwait") OR (MH "Lebanon") OR (MH "Oman") OR (MH "Qatar") OR (MH "Saudi Arabia") OR (MH "Syria") OR (MH "United Arab Emirates") OR (MH "Yemen") OR (MH "Pakistan")	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S2	(MH "Clinical Nursing Research")	Search modes - Boolean/Phrase	Rerun  View Details  Edit		
<input type="checkbox"/> S1	(MH "Research, Nursing")	Search modes - Boolean/Phrase	Rerun  View Details  Edit		

**B. The Second Search, after adding “Midwife” to the search terms above, (4 results)**

**4. The Jordanian Database for Nursing Research Search Results – out of 411 articles found, 77 included in the study**

A search by year was utilized to find articles in this database.



Lists

- Database Committee
- Search Options
- Home
- Research
- Search By Research Title
- Search By Research Publishing Year
- Search By Research Journal
- Search By Author
- All Authors Research
- Search By Publisher
- Search By Speciality
- Search By Collaborated Country
- Research Relation To JNC Priority
- Funded Research
- Nursing Research
- Priority Areas 2009/2010
- Insert Research
- Edit Other Data

All Site Content

From Publishing Year:  To Publishing Year :

Filter | Sort by:  | Group by:

Title	Author	Publishing Year
<b>PublishingYear: 2,000</b>		
Cross-cultural comparison of the concerns of beginning baccalaureate nursing students	Callister LC.; Khalaf I; Keller D.	
University students' knowledge of AIDS	Petro-Nustas WI.	
Survey of the health of the elderly in Jordan	Majali, S.	
Comparative bioavailability of two test brands of Theophylline; tablets and a reference QUIBRON®-T/SR under fasting and limited food conditions	Al-GhazawiM. ; Majali, S.	
Advancing the development of human resources in nursing in Jordan.	Thomas B; Rajacich D; Al-Maaitah R; Cameron S; Malinowski A	
A transcultural study of Jordanian nursing students' care encounters within the context of clinical education.	Nahas VL	
Exercise participation decisions of Jordanian myocardial infarction patients: application of the decisional conflict theory.	Al Hassan M; Wierenga M	
Home healthcare and the Arab-American	Haddad LG; Hoeman SP.	

## Appendix 3: Modified Barriers Scale

### QUESTIONNAIRE

#### Barriers and Facilitators to Using Research in Practice

**Country:**

**Position:**

For each item, circle the number of the response that best represents your view. Thank you for sharing your views with us.

	IS THIS A BARRIER?				
	<i>Not at all</i>	<i>A small amount</i>	<i>A moderate amount</i>	<i>A great amount</i>	<i>No opinion</i>
1. Research reports/articles are not readily available	1	2	3	4	5
2. Implications for practice are not made clear	1	2	3	4	5
3. Statistical analyses are not understandable	1	2	3	4	5
4. The research is not relevant to the nurse's or midwife's practice	1	2	3	4	5
5. The nurse/midwife is unaware of the research	1	2	3	4	5
6. The facilities are inadequate for implementation	1	2	3	4	5
7. The nurse/midwife does not have time to read research	1	2	3	4	5
8. The research has not been replicated	1	2	3	4	5
9. The nurse/midwife feels the benefits of changing practice will be minimal	1	2	3	4	5
10. The nurse/midwife is uncertain whether to believe the results of the research	1	2	3	4	5
11. The research has methodological inadequacies	1	2	3	4	5
12. The relevant literature is not compiled in one place	1	2	3	4	5
13. The nurse/midwife does not feel she/he has enough authority to change patient care procedures	1	2	3	4	5
14. The nurse/midwife feels results are not generalizable to own setting	1	2	3	4	5
15. The nurse/midwife is isolated from knowledgeable colleagues with whom to discuss the research	1	2	3	4	5
16. The nurse/midwife sees little benefit for self	1	2	3	4	5
17. Research reports/articles are not published fast enough	1	2	3	4	5
18. Physicians will not cooperate with implementation	1	2	3	4	5
19. Administration will not allow implementation	1	2	3	4	5
20. The nurse/midwife does not see the value of research for practice	1	2	3	4	5
21. There is not a documented need to change practice	1	2	3	4	5

*Please proceed to page 2 question #22*

IS THIS A BARRIER?

	<i>Not at all</i>	<i>A small amount</i>	<i>A moderate amount</i>	<i>A great amount</i>	<i>No opinion</i>
22. The conclusions drawn from the research are not justified	1	2	3	4	5
23. The literature reports conflicting results	1	2	3	4	5
24. The research is not reported clearly and readably	1	2	3	4	5
25. Other staff are not supportive of implementation	1	2	3	4	5
26. The nurse/midwife is unwilling to change/try new ideas	1	2	3	4	5
27. The amount of research information is overwhelming	1	2	3	4	5
28. The nurse/midwife does not feel capable of evaluating the quality of the research	1	2	3	4	5
29. There is insufficient time on the job to implement new ideas	1	2	3	4	5
Are there other things you think are barriers to research utilization? If so, please list and rate each on the scale:					
30. _____	1	2	3	4	5
31. _____	1	2	3	4	5
32. _____	1	2	3	4	5
33. _____	1	2	3	4	5

34. Which of the above items do you feel are the *three greatest barriers* to nurses'/midwives' use of research?

Greatest Barrier ..... Item #: \_\_\_\_\_  
 Second Greatest Barrier ..... Item #: \_\_\_\_\_  
 Third Greatest Barrier ..... Item #: \_\_\_\_\_

35. What are the three things you think *facilitate* research utilization?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This questionnaire was adapted from:

Crane, J., Pelz, D., and Horsley, J.A. *CURN Project Research Utilization Questionnaire*. Ann Arbor, Michigan: Conduct and Utilization of Research in Nursing Project, School of Nursing, The University of Michigan, 1977.

c. 1987, Funk, Champagne, Tornquist & Wiese