



# The History of Nursing Research Methodology in Iran: A Mixed Methods Study

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**Abstract**

**Introduction:** Nursing research has dramatic effects on nursing practice. Studying the history of nursing research can provide valuable information about past challenges and future prospects. This study aimed to explore the history of nursing research methodology in Iran.

**Methods:** This was a mixed methods study. In the quantitative part, articles published by nurses in the last four decades were reviewed using a checklist. In the qualitative part, several Iranian nursing doyens and experts were recruited through purposeful and snowball sampling and interviewed through semi-structured interviews. The main focus of the interviews was on the history of nursing research methodology in Iran. Qualitative data were analyzed through conventional content analysis. Finally, the findings of the two parts were merged.

**Results:** The number of nursing articles and journals increased from 39 and one in the 1980s to respectively 461 and thirty in the 2010s. Articles published in the 1980s and the 1990s were mainly related to descriptive researches (91.9% and 88.4%, respectively), while articles in the 2000s were mainly related to quasi-experimental researches (42.8%) and articles in the 2000s were mainly related to quasi-experimental and experimental researches. Qualitative researches become common in the 2010s. The results of the qualitative part were presented based on three era.

**Conclusions:** Nursing research in Iran has had significant improvements in the last three era. Yet, nurses need to make more serious attempts to provide conclusive evidence for nursing practice, improve the Iranians' health status, and promote the position of nursing in Iran and the position of Iranian nursing in the world.

## INTRODUCTION

Knowledge development is among the key factors behind the development of each country [1]; thus, most countries, particularly developed countries, heavily invest in knowledge development [2]. There are different methods for knowledge development, including trial and error and personal experience [3]. In nursing, the trial and error method was once the main method of knowledge development. However, this method was time-consuming and could threaten

patients' lives [4]. Besides, nurses greatly relied on their university knowledge and personal experiences. But personal experience was not a reliable method for making wise clinical decisions in new situations [5]. Accordingly, nurses attempted to use other strategies for knowledge development, particularly scientific research [3].

Knowledge development through rigorous research can empower nurses for predicting and effectively managing

professional and clinical challenges. Knowledge acquired through nursing research forms the basis for all areas of nursing. For instance, it can be used in clinical practice to improve the quality of care services [4]. Moreover, research can link theory and practice and promote the professional status of nursing [6]. Research results can be used to develop more effective interventions for improving patient outcomes.

Modern nursing research roots in the works of Florence Nightingale, the mother of modern nursing. She formulated research questions, collected data to answer the questions, used statistics to analyze the collected data, and used the results in practice. Her researches resulted in the improvement of war veterans' conditions and helped her provide them with cleaner and better ventilated environment, clean water, and appropriate diet and hence, significantly reduced veteran's mortality rate from 40% to 2% [7]. In her *Notes on Nursing*, she described environmental factors which promote patients' physical and emotional well-being [8]. However, her insist on nursing research was overlooked for more than one hundred years [9]. until nurses understood the importance of research in the 1960s [3]. The first nursing research center was established in 1983 in the United States National Institute of Health [8]. The first US based nursing journal, *The American Journal of Nursing*, was published in 1900 and edited by Sophia Palmer; it was established as an official means of communication of nursing knowledge and issues between members [10, 11]. The first American nursing association was established a year later in 1901 in New York, with registration following in 1903 [10].

The history of nursing research in Canada followed a similar sequence of events as in the US. It started with the *Canadian Nurse* in 1905 as a general nursing journal [12] followed by the establishment of a specific nursing research journal titled *Nursing Papers* by Dr. Moyra Allen of McGill University in 1969 [13].

Before 1975, nurses in Iran performed research-related roles as research assistants [14]. However, in 1975, independent nursing research started by offering the first master's program of nursing in Nursing School of Iran Medical Center. In line with the increasing number of master's nurses and nursing research centers, budget allocation to nursing research motivated nurses to design and perform independent researches [8]. Currently, different universities in Iran offer master's and doctoral nursing programs and many postgraduate Iranian nursing students are performing painstaking researches in different areas of professional practice and patient care. Yet, there is limited in-depth information about the history and the trend of nursing research in Iran. Thus, this study aimed to explore the history of nursing research methodology in Iran.

## METHODS

This was a mixed methods study. In mixed methods studies, researchers combine the elements and the characteristics of quantitative and qualitative designs in order to obtain deeper understanding of their intended phenomena [15]. The mixed concurrent methods design was used in the present study in order to obtain more in-depth and more reliable findings [4].

### The Quantitative Part

In this part, a review study was done on 733 articles published in English and Persian in Iranian journals. Given the paucity of studies conducted in the 1980s and 1990s, all articles published in these two decades were included through the census method. However, sampling from the articles published in the 2000s and 2010s was done through multistage cluster sampling. Accordingly, two issues from each volume of each of the twelve journals published in the 2000s and two issues from each of the thirty journals published in the 2010s were randomly selected and then, all articles of the selected issues were included in the study. Study instrument was a checklist which contained items on the year of publication, journal type and language of publication. The SPSS – 16 software was employed to describe the collected data using the measures of descriptive statistics.

### The Qualitative Part

Participants in this part were the doyens and experts of nursing in Iran who were selected through the purposeful and snowball sampling (Table 1). Data were collected through semi-structured interviews. Interview questions were, "What is the current status of research in nursing?" "Does it have a satisfactory status?" "Does it cover the professional goals of nursing?" "What has been the path of nursing research in Iran up to its current position?" "Where and how were the first researches in nursing done?" "How was their quality?" "Were those researches related to the development of nursing research in Iran?" "What was the role of the first Master's programs in developing nursing research?" "How did PhD programs in Iran affect nursing research?" "Where and when was the first professional nursing congress held?" "What has been the history of nursing congresses in Iran?" "What were the first nursing journals in Iran?" "How were they founded and developed?" "What documents are available to show the path of nursing research development in Iran?" The data collected through interviews were analyzed through conventional content analysis. Primarily, the interviews were transcribed and reviewed and then, excerpts from the transcripts which were related to the study aim were extracted. In order to ensure the credibility of the findings, data collection was independently done by two of the authors and then, their collected data were compared. Data collection through in-depth semi-

structured interviews, providing clear descriptions about data analysis, providing quotations from participants' experiences, exclusion of irrelevant data, close relationship with participants, prolonged engagement with the study, immersion in the data, member checking, and peer checking [16]. This study was used. The checklist for evaluating articles, year, place, title, and methodology. We used the qualitative method and the opinions of your predecessors, Therefore the combined method was used to confirm the coordination and convergence of different research findings [17].

## RESULTS

### The Findings of the Quantitative Part

The findings of the quantitative part revealed that among the 733 reviewed articles, 37 had been published in the 1980s in a single journal, 69 in the 1990s in two journals, 166 in the 2000s in twelve journals, and 461 in the 2010s in thirty journals.

Among the 37 articles published in the 1980s, 91.9% were descriptive and 8.1% were correlational studies (Table 2). In this era, 56.75% of articles were related to diseases and their prevalence and complications, 16.25% to the quality of nursing care, and 13.5% to nurses' and patients' knowledge, attitudes, and practice (Table 3). All articles in this decade were in Persian and had been published in a single scientific journal (Tables 4 and 5).

In the 1990s, 88.4% of studies were descriptive, 10.1% were correlational, and 1.4% were quasi-experimental (Table 2). Moreover, 44.99% of studies in this decade were related to diseases and their prevalence and complications, 15.9% to the quality of nursing care, and 13% to nurses' and patients' knowledge, attitudes, and practice (Table 3). All studies in this decade had been published in a single scientific journal in Persian (Table 4 and 5).

Among the 166 articles published in the 2000s, 42.8% were quasi-experimental studies (Table 2). Moreover, 22% of the articles were related to professional issues and problems, 17.5% to nurses' and patients' knowledge, attitudes, and practice, and 16.9% to patients' and their family members' problems and needs (Table 3). Around 81.3% of articles in this decade had been published in Persian in scientific research journals (Table 4 and 5).

Finally, among the 461 articles published in the 2010s, 25.4% were related to quasi-experimental studies, 25.3% to experimental studies, and 16.9% to qualitative studies. In this decade, 25.5% of studies were on the effects of education on patients' knowledge, skills, and practice, 20.8% on patients' and their family members' problems and needs, 20.8% on the effects of medical and nursing interventions on patient outcomes, and 13.9% on professional issues and problems (Table 3). Most

articles in this decade (i.e. 67.9%) had been published in scientific research journals, 26.3% in scientific journals, and 5.8% in journals indexed in the Institute for Scientific Information (ISI) (Table 4). Around 77.2% of articles in this decade were published in Persian and the remaining 22.8% in English (Table 5).

### The Findings of the Qualitative Part

The findings of this part are presented based on the Methodology as follows.

Modern nursing in Iran was based on professional nursing in the United States. The first nursing school in Iran was founded by religious missionaries in 1915 in Urmia. In 1965, the first four-year nursing program was launched in Firoozgar higher education center in Tehran, Iran, and then, in other cities. The program for such centers was developed based on the requirements of the International Nursing Councils and the World Health Organization and was approved by the Iranian Higher Council for Culture. Besides specialized and technical courses, this program incorporated courses on social and behavioral sciences, biostatistics, and nursing research. For the partial fulfillment of the bachelor's of sciences degree, nursing students had to do group thesis project.

"Nursing research started in 1966–1967, i.e. when we launched a BSc program in Firoozgar nursing school. Nursing research and biostatistics were among the courses in the program. Students passed a thesis course in the fourth year. Their thesis were mainly descriptive and even sometimes dealt with the effects of education on patients' behavior modification" (a nursing doyen). The first article in nursing, entitled "Nursing education in Iran", was written by Azar Riahi and was published in 1968 in the International Journal of Nursing Studies. She had already written, in 1976, the first nursing book in Iran in Persian. Independent nursing research in the 1970s started by the implementation of the Master of Science program in 1976. Before that time, nurses were mostly research assistants. Nurses' articles in this decade mainly described diseases and were the Persian translation of English articles.

I had returned to Iran from Canada just two years earlier and was working with a cardiac surgeon who was also the deputy of the minister of health. After ten years, he became the education deputy of the minister of science. At that time, he told me that he would do whatever I requested. Therefore, he approved the Master of Science program of nursing education and nursing management in 1975 (P. 1; a nursing leader).

### Descriptive Era

Most nursing researches in this era were descriptive, though there were some analytical studies which had been performed by master's nursing students as their thesis. The results of these studies were mainly presented in medical congresses. In 1989, the first nursing congress was held in Rasht, Iran. It greatly

contributed to the promotion of nursing research in Iran. Besides, the Iran Journal of Nursing was founded in 1987 in the Faculty of Nursing and Midwifery of Iran university of Medical Sciences, Tehran, Iran. Since then, nurses, midwives, and master's students published their articles in that journal.

"I founded, in 1987, the first nursing journal in Iran, the Iran Journal of Nursing. Of course, it took me four years to obtain the necessary approval for the journal from the ministry of Culture" (P. 1; a nursing leader).

Most nursing researches in this period were conducted by nursing instructors. However, there was no nursing-specific scientific research journal and hence, the results of most nursing studies either were published in medical journals or were not published at all. Besides, nursing congresses became a routine practice in nursing faculties and turned into a good place for the presentation of nursing researches.

"I liked congresses to be interdisciplinary, so that nurses, physicians, and other healthcare providers could participate all together. However, now, it is not so. This is the main reason that physicians haven't understood the scientific and research-based identity of our profession" (P. 1; a nursing leader).

Student research committees were also gradually established in this era. Moreover, the first PhD programs in nursing were offered in Tabriz Faculty of Nursing and Midwifery, Tabriz, Iran, in 1995 in Tarbiat Modares University, Tehran, Iran, in 1996 and in Tehran and Iran Faculties of Nursing and Midwifery, Tehran, Iran, in 1999.

"Early in the 1990s, around ten nursing instructors who were fluent in English were given scholarship to study nursing at PhD level in foreign universities. After they returned to Iran, the PhD program was established in the country" (P. 3).

In addition, nurses in this decade started to translate and publish nursing textbooks in Persian.

"Those instructors who taught the Fundamentals of Nursing course translated "Du Gas's Nursing Foundation" textbook into Persian" (P. 3).

### Intervention Era

In this era, the number of interventional nursing researches significantly increased. PhD nursing students, in particular, focused on conducting qualitative nursing researches.

"Qualitative researches started with the establishment of PhD programs. However, none of our instructors had information about qualitative research and hence, they relied on the relevant textbooks" (P. 4).

In August 26, 2006, the Iran Journal of Nursing was approved by the Iranian Commission of Medical Journals as the first scientific research journal in nursing. After that, the Hayat and the Nursing Research Journal were also approved as scientific research journals in nursing. These approvals significantly promoted

nursing research in the 2000s in Iran. The Iranian Nursing Association was also founded in 2003. This association has so far significantly contributed to the promotion of nursing research in Iran through attending congresses and publishing different articles. Another main event in nursing research in this decade was the establishment of the Nursing and Midwifery Care Center in 2001 in Iran University of Medical Sciences, Tehran, Iran. This center was then approved in 2007 as the first Nursing Research Center in Iran.

In the 2000s, different specialized nursing congresses were held by nursing faculties around the country and many Iranian nurses successfully presented their articles in international congresses held outside Iran. In addition, nursing researchers focused on publishing their studies in research journals. Accordingly, the first journal in English was published in 2004 by Isfahan Faculty of Nursing and Midwifery, Isfahan, Iran. Moreover, the number of nursing research centers increased to four. Besides, student research committees played more active roles in doing and supporting quality researches and nurses won top awards in the annual Razi Medical Research Festival. Another main event for nursing in this decade was the approval of the Iranian Nursing Council Act by the Iranian Parliament, which greatly contributed to the development of professional nursing. Furthermore, nurses and nursing instructors wrote and translated more than one thousand books which were published by different nursing-specific publishers.

"Currently, we have approved four nursing research centers in Iran, Tehran, Isfahan, and Hamadan Universities of Medical Sciences" (P. 2).

### Exploratory Era

The conditions in the 2010s have moved nurses towards professionally conducting researches and seriously attending scientific societies and occasions. While qualitative nursing researches in the 2000s were mainly performed through grounded theory, phenomenology, and content analysis, nursing researchers have recently resorted to other qualitative approaches such as action research and ethnography. Moreover, the number of systematic reviews and evidence-based researches has increased exponentially. In addition, nurses have paid special attentions to mixed methods studies in recent years, so that most PhD dissertations are currently done using this method.

In 2011, the Iranian Journal of Nursing and Midwifery Research was indexed in PubMed. At that time, it was the first nursing journal in Iran and the Middle East which was indexed in PubMed. Moreover, the Nursing Research Center of Iran University of Medical Sciences, Tehran, Iran, ran a PhD by research program. The first students were enrolled in 2011. Moreover, in February 1, 2014, the same research center was registered in the



World Health Organization Collaborating Center Database as a collaborating center for nursing education and research in the Eastern Mediterranean area. The number of nursing research centers and nursing-specific scientific research journals also considerably increased in this decade, so that currently, there are 26 nursing-specific scientific research journals and 34 nursing research centers in the country.

“One day, I went to a place where the health minister had a meeting. There, I waited long until I could visit the minister. He agreed with the approval of just one nursing journal and later, he declared that we need at least five nursing journals in our country. Now, we have more than thirty nursing journals” (P. 3).

**Table 1.** Participants' Characteristics

No.	Gender	Clinical Experience (Years)	Managerial records (Years)	Research training records (Years)
1	Female	20	32	42
2	Female	4	33	43
3	Female	-	-	30
4	male	6	10	24

**Table 2.** The Frequency Distribution of Research Designs in the Past four Decades

Decade Design	1980s N (%)	1990s N (%)	2000s N (%)	2010s N (%)
Descriptive	34 (91.9)	61 (88.4)	19 (11.4)	68 (14.8)
Correlational	3 (8.1)	7 (10.1)	53 (31.9)	81 (17.6)
Quasi-experimental	0	1 (1.4)	71 (42.8)	117 (25.4)
Experimental	0	0	18 (10.8)	107 (25.3)
Qualitative	0	0	5 (3)	8 (16.9)
Total	37	69	166	461

**Table 3.** The Frequency Distribution of Research Topics in the Past four Decades

Decade Design	1980s N (%)	1990s N (%)	2000s N (%)	2010s N (%)
Patients' and nurses' knowledge, attitudes, and practice	5 (13.5)	9 (13)	29 (17.5)	25 (4.5)
Diseases and their complications	21 (56.75%)	31 (44.99)	22 (13.3)	22 (4.8)
Patients' and their families' needs and problems	3 (8.1)	9 (13)	28 (16.9)	96 (20.8)
The effects of education on knowledge, skills, and practice	1 (2.7)	4 (5.8)	21 (12.7)	50 (10.8)
The quality of nursing care	6 (16.25)	11 (15.9)	10 (6)	42 (9.5)
Professional issues and problems	1 (2.7)	4 (5.8)	22 (13.3)	64 (13.9)
The effects of medical and nursing interventions	0	0	23 (13.8)	96 (20.8)
Complementary therapies	0	1 (1.51)	11 (6.5)	66 (14.9)

**Table 4.** The Frequency Distribution of Journal Types in the Past Four Decades

Decade Design	1980s N (%)	1990s N (%)	2000s N (%)	2010s N (%)
Scientific	37 (100)	69 (100)	31 (18.6)	51 (11.1)
Scientific research	0	0	135 (81.4)	371 (80.5)
ISI published in Iran	0	0	0	39 (8.5)

**Table 5.** The Frequency Distribution of Research Publications Based on Publication Language

Decade Design	1980s N (%)	1990s N (%)	2000s N (%)	2010s N (%)
Persian	37 (100)	69 (100)	135 (81.3)	356 (77.2)
English	0	0	31 (18.7)	105 (22.8)

**Table 6.** The Frequency Distribution of Journal Types in the Past Three Eras

Era Design	Descriptive N (%)	Intervention N (%)	Exploratory N (%)
Scientific	69 (100)	31 (18.6)	51 (11.1)
Scientific research	0	135 (81.4)	371 (80.5)
ISI published in Iran	0	0	39 (8.5)

**Table 7.** The Frequency Distribution of Research Publications Based on Publication Language

Era Design	Descriptive N (%)	Intervention N (%)	Exploratory N (%)
Persian	69 (100)	135 (81.3)	356 (77.2)
English	0	31 (18.7)	105 (22.8)

## DISCUSSION

This study aimed to explore the history of nursing research Methodology in Iran. Findings indicated the growing trend of nursing research in Iran. Moreover, study findings revealed the growing number of nursing articles and journals from 39 and one in the 1980s to

respectively 461 and thirty in the 2010s. In line with these findings, previous studies also showed significant growths in nursing and medical researches in Iran in recent decades [18-20]. A study also reported a significant increase in the number of Iranian articles indexed in the Web of Sciences from one in 2003 to

seventy in 2013 [2]. Accordingly, Iran is estimated to reach a top rank in the world respecting scientific publications [18]. Of course, studies in other countries of the area also showed increases in the number of nursing researches. For instance, a study indicated a sixteen-fold increase in the number of nursing researches conducted in Qatar during the five-year period of 2011–2015 [21].

Our findings also showed marked shifts in the type of studies during recent period, generally from quantitative to qualitative studies and specifically from pure descriptive to correlational and interventional studies. Currently, the most common studies are interventional studies and systematic reviews, which seem to follow the trend of studies in medical sciences [22]. Similarly, a former study reported that the quantitative approach was the dominant research paradigm in the first and the second decades of nursing research in Iran [23]. Moreover, another study which investigated nursing research in the Middle East and North African countries during 2000–2015 reported that 75.24% of researches had been quantitative, while 56% of researches in the first years of this period had been descriptive [24]. Another study on nursing articles published in Jordan in 1986–2012 also found that 77% of articles had come from quantitative researches, chiefly in the area of nursing management [25]. However, given the wealth of subjective humanistic concepts in nursing, the qualitative paradigm is the most appropriate paradigm for nursing research [26]. Qualitative researches are specifically applicable for the redefinition of nursing phenomena based on the characteristics of the immediate sociocultural context [27].

Our findings revealed that in the 1980s, nursing articles mainly dealt with diseases and their prevalence and complications. Moreover, in that decade, nursing articles were mostly the Persian translation of articles already published in English in other countries. However, over time, nursing researches gradually shifted towards determining patients' and their families' needs and problems as well as examining the effects of nursing care on patient outcomes. In line with our findings, an earlier study also noted shifts in the focus of nursing researches in each of the three decades from 1973 to 2001. That study reported a 14.7% decrease in the number of researches into nurses' and patients' knowledge, attitudes, and practice, and a 9.1% increase in the number of researches into the effects of nursing interventions on patient outcomes during those three decades [22]. The increasing interest of nursing researchers in health and nursing care may be due to the central importance of care to nursing. Some nursing scholars refer to care as the most principal concept in nursing. For instance, Watson considers care as the essence and the core concept of nursing and an indicative of nursing focus on clinical practice [28].

Primarily, there was only one nursing journal in Iran published in Persian as a scientific journal. However, the first scientific research journal was approved and published in 2006 and then, the number of these journals significantly increased to thirty journals in ten years. Moreover, some Iranian nursing journals started to publish articles only in English and were indexed in international indexing services such as PubMed and ISI [29]. Nonetheless, a study reported that the mean of articles indexed in Medline from 1993 to 2003 was 0.2 for each ten million people in Iran, 11.6 in Jordan, 140 in England, and 172.2 in the United States. Therefore, the shares of these countries in developing nursing knowledge were 0.01%, 0.04%, 5.6%, and 32.9%, respectively [22]. Knowledge development greatly depends on postgraduate education. In Iran, postgraduate education and research centers are in their young ages and hence, the rank of the country in knowledge development is still low. The percentage of scientific publications in nursing in Iran compared with Turkey, Japan, Canada, and the United States is 29%, 35%, 0.09, and 0.01%, respectively. Moreover, the growth rate of scientific publications in nursing in Iran between 2007 and 2010 has been 72%, putting Iran in the second rank in the Middle East area only after Turkey with a growth rate of 119% [23].

## CONCLUSIONS

Scientific publication in Iran has had a growing trend in nursing since its onset. Of course, this growing trend has been in line with the growth of scientific publication in other medical sciences in Iran and in the world. Despite the significant increases in nursing scientific publications in Iran during the last periods, all nurses, particularly instructors and researchers, need to make more serious attempts to provide conclusive evidence for nursing practice, improve Iranians' health status, and promote the position of nursing in Iran and the position of Iranian nursing in the world.

## LIMITATIONS

In the quantitative stage, only a part of the published articles were randomly recruited. Moreover, in the qualitative section of the study a few nursing pioneers were purposefully recruited and some others denied to participate in the study.

## FUTURE RESEARCH

Quantitative and qualitative growth of nursing scientific productions would help improve the country's scientific position. Developing strategies for guiding the research activities toward national healthcare problems and international publishing of nurse's scientific productions, and strengthening research infrastructure would strengthen the nursing research in Iran. Then, the effects of such strategies can be studied.

## LINKING EVIDENCE TO ACTION

Nursing scientific productions had an increasing trend over past four decade.

Practice nurses have not any role in production of nursing science that leads to loss of true nursing identity. Encouraging studies toward national healthcare problems and international publishing of nurses' scientific productions, and strengthening research infrastructure would strengthen the nursing research in Iran.

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#### AUTHOR CONTRIBUTIONS

M.A.H. supervised all of the stages of the data collection and data analysis, and provided critical points during the manuscript preparation. Y.R performed the study

#### REFERENCES

- Norouzi A, Abolghasemi M, Ghahremani M. Science Production Strategy Based on Analysis of Organizational and Managerial Structures Strategic Management Studies. *Strategic Manage Stud.* 2012;(12):129-49.
- Mahdizadeh S, Heydari A. Iranian nursing contribution to scientific production in late decade (2003-2012) in Web of Science Database. *J Health Promot Manage.* 2014;3(2):26-33.
- Polit DF, Beck CT. 2010 Essentials of nursing research: Appraising evidence for nursing practice: Lippincott Williams & Wilkins.
- Grove SK, Burns N, Gray J. Understanding nursing research: Building an evidence-based practice: Elsevier Health Sciences 2014.
- Adib-Hajbaghery M. Evidence-based practice: Iranian nurses' perceptions. *Worldviews Evid Based Nurs.* 2009;6(2):93-101. doi: 10.1111/j.1741-6787.2009.00149.x pmid: 19413583
- Glanz K. Health behavior: Theory, research, and practice: John Wiley & Sons 2015.
- Moule P, Aveyard H, Goodman M. Nursing research: An introduction: Sage 2016.
- Sarkis JM, Connors VL. Nursing research: historical background and teaching information strategies. *Bullet Med Library Associat.* 1986;74(2):121.
- Louis-Egbuchiem NU. NURSING RESEARCH: THE JOURNEY AND THE ROLE OF THE NURSE.
- Dock LL, Stewart IM. A short history of nursing from the earliest times to the present day: GP Putnam's sons 1925.
- Wheeler CE. The American Journal of Nursing and the socialization of a profession, 1900-1920. *ANS Adv Nurs Sci.* 1985;7(2):20-34. doi: 10.1097/00012272-198501000-00006 pmid: 3917644
- Pasieka DE. A History of the Evolution of Nursing Research in the Faculty of Nursing, University of Alberta from 1980 to 1998 2017.
- Gottlieb LN. From nursing papers to research journal: A 30-year odyssey. *Canada J Nurs Res Arch.* 1999.
- FallahiKhashkanab M. The Historical Course of Nursing Research and Capacity Building Process in Nursing Research. *Facult Nurs Midwife Tehran Univ Med Sci.* 2013;19(3):13.
- Tariq S, Woodman J. Using mixed methods in health research. *JRSM Short Rep.* 2013;4(6):2042533313479197. doi: 10.1177/2042533313479197 pmid: 23885291
- Polit D, Beck C. Nursing research: Generating and assessing evidence for nursing practice; 2008. 10th. Philadelphia: Lippincott Williams & Wilkins Co 2017.
- O'Reilly M, Kiyimba N. Advanced qualitative research: A guide to using theory: Sage 2015.
- Shiri R, Fadaee G. Rate of Cooperation in Type one Universities of Medical Sciences in Level of Nation and International Indexed in the Database Between 2004-2008. *J Inform Sci.* 2011;17(3):455-75.
- Abdekhoda H, Ghazimirsaeed S, Nourzi A. Evaluation of Scientific Production of Iranian Medical Domain Based on the Document Indexed from Scientific Journals in Chosen Databases, Between 2005- 2009. *J Payavard Tehran Univ Med Sci.* 2010;4(1):18-30.
- Rahimi F, Jahromi MK, Rad ID. Scientific products of the world's premier Islamic countries in the field of medicine, dentistry, nursing in Scopus (2001-2010) Publication of Persepolis. 2013:126.
- Nashwan AJ, Mansour DB, Alzayyat A, Nair SK, Zawahreh AI. Development of Nursing Research in Qatar: 15-Year Status Report. *Open J Nurs.* 2017;7(2):242. doi: 10.4236/ojn.2017.72020
- Mohammadi E, Yazdi-Moghadam H. Nursing Research in the Past 30 Years. *J Nurs Res.* 2006;1(2):63-72.
- Mohammadi I, Orazpardeh S, FallahiKhashkanab M, Nikbakhtnasrabadi A, Yaghmaie F, Alhani F. Nursing Nursing Audit, Iranian Scientific Society of Nursing. 2011:69.
- Alhusaini MA, Sun CJ, Larson EL. Clinical nursing and midwifery research in Middle Eastern and North African countries: A Scoping review. *J Health Spec.* 2016;4(4):238. doi: 10.4103/2468-6360.191904
- Khalaf I. Development of nursing research in Jordan (1986-2012). *Int Nurs Rev.* 2013;60(4):461-8. doi: 10.1111/inr.12042 pmid: 24251938
- Mohamadi I, Yazdimoghadam H. Nursing research in the 3 past decades. 2006.
- Streubert HJ, Carpenter DR. Qualitative Research in Nursing: Advancing the Humanistic Imperative. 5Th ed. Edition f, editor. Philadelphia Lippincott Williams & Wilkins 2011.
- Meleis AI. Theoretical nursing: Development and progress: Lippincott Williams & Wilkins 2011.
- Sharifzadeh S, Ghasempour M, Hajebrahim M, Rezaianzadeh A, Dehghan S. Evaluation of the Scientific Output in one of the Major Medical Universities of Iran. *Shiraz E Med J.* 2014;15(3):e22360. doi: 10.17795/semj22360