

Patient education among nurses: bringing evidence into clinical applicability in Iran

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Objective. The aim of this study was to present a comprehensive review of the literatures describing barriers and facilitators of patient education (PE) perceived by Iranian nurses in order to explain clinical applicability of patient education. **Methods.** Review of the literature was undertaken using the international databases including PubMed/Medline, Scopus, ScienceDirect, as well as Google Scholar. Also, Persian electronic databases such as Magiran, SID and IranMedex were searched. Electronic databases were searched up from conception to September 2014 using search terms: “patient education”, “patients education”, “patient teaching”, “patient training”, “nurse”, “nurses”, “nursing”, “and “Iran”. Only studies were included that were related to barriers and facilitators of PE among Iranian nurses. **Results.** Twenty-seven studies were included. The main influential barriers were categorized into three major areas: 1) Nurse-related factors: nursing shortage 2) Administration-related factors: unsupportive organizational culture, and

3) Patient-related factors: low compliance. The most perceived facilitators were recognized as “increasing, selecting and training special nurses for providing PE” and “providing PE courses for nurses and appropriate facilities for PE”. **Conclusion.** Iranian nurses encounter barriers in PE, and the most frequently encountered barriers were related to administration factors. These findings have implications for administrators and managers in health settings. In order to promote PE among nurses, administrators should create a supportive environment and use effective strategies to smooth the progress of PE by nurses in their practice in order to ensure optimal outcomes for patients.

Key words: patient education as topic; health services; nurses; Iran.

La educación al paciente entre las enfermeras: brindando evidencia en la aplicabilidad clínica en Irán

Objetivo. Identificar las barreras y facilitadores de la Educación del Paciente (EP) percibida por las

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enfermeras iraníes con el fin de explicar la aplicabilidad clínica de la educación al paciente. **Métodos.** Revisión de la literatura que se llevó a cabo utilizando las bases de datos internacionales PubMed-Medline, Scopus, ScienceDirect y Google Scholar. Además, se realizaron búsquedas en las bases de datos electrónicas persas Magiran, SID e IranMedex. Se realizaron búsquedas desde la creación de las bases de datos hasta septiembre de 2014 usando los términos de búsqueda: “educación del paciente”, “educación de pacientes”, “enseñanza del paciente”, “entrenamiento del paciente”, “enfermera”, “enfermeras”, e “Irán”. Solo se analizaron los estudios relacionados con las barreras y facilitadores de EP entre enfermeras iraníes. **Resultados.** Se incluyeron 27 estudios. Las principales barreras se clasificaron en tres grandes áreas: 1) Factores relacionados con la enfermería: escasez de este recurso humano, 2) Factores relacionados con la administración: inapropiada cultura organizacional y 3) Factores relacionados el paciente: bajo cumplimiento. Los facilitadores más percibidos se reconocieron como “el aumento, la selección y formación especial de las enfermeras para proporcionar EP” y “disponibilidad de cursos de EP para las enfermeras y la disponibilidad de instalaciones adecuadas para brindar el EP”. **Conclusión.** Las enfermeras iraníes encuentran barreras en la EP, siendo las más frecuentes las relacionadas con factores de la gestión de los recursos. Estos resultados tienen implicaciones para los administradores y directivos de las instituciones de salud, pues para promover que las enfermeras en su práctica brinden la EP, se debe crear un ambiente de apoyo y utilizar estrategias eficaces con el fin de garantizar resultados óptimos en los pacientes.

Palabras clave: educación del paciente como asunto; servicios de salud; enfermeros; Iran.

Introduction

Patient education (PE) is a fundamental aspect of patient care and increasingly recognized as an essential function and one of the professional standards in nursing practice.¹ It is considered as a dynamic and continuous process including

A educação ao paciente entre a enfermeiras: brindando evidência na aplicabilidade clínica no Irã

Objetivo. Identificar as barreiras e facilitadores da educação do paciente (EP) percebida pelas enfermeiras iranianas com o fim de explicar a aplicabilidade clínica da educação ao paciente. **Métodos.** Revisão da literatura que se levou a cabo utilizando as bases de dados internacionais PubMed-Medline, Scopus, ScienceDirect e Google Scholar. Ademais, se realizaram buscas nas bases de dados electrónicas persas Magiran, SID e IranMedex. Se realizaram buscas desde a criação das bases de dados até setembro de 2014 usando os termos de busca: “educação do paciente”, “educação de pacientes”, “ensinamento do paciente”, “treinamento do paciente”, “enfermeira”, “enfermeiras”, e “Irã”. Só se analisaram os estudos relacionados com as barreiras e facilitadores de EP entre enfermeiras iranianas. **Resultados.** Se incluíram 27 estudos. As principais barreiras foram classificadas em três grandes áreas: 1) Fatores relacionados com a enfermagem: escassez deste recurso humano, 2) Fatores relacionados com a administração: inapropriada cultura organizacional y 3) Fatores relacionados o paciente: baixo cumprimento. Os facilitadores mais percebidos foram reconhecidos como “o aumento, a seleção e formação especial das enfermeiras para proporcionar EP” e “disponibilidade de cursos de EP para as enfermeiras e a disponibilidade de instalações adequadas para brindar o EP”. **Conclusão.** As enfermeiras iranianas encontram barreiras na EP, sendo as mais frequentes as relacionadas com fatores da gestão dos recursos. Estes resultados têm implicações para os administradores e diretivos das instituições de saúde, pois para promover que as enfermeiras em sua prática brindem a EP, se deve criar um ambiente de apoio e utilizar estratégias eficazes com o fim de garantir resultados ótimos nos pacientes.

Palavras chave: educação de pacientes como assunto; serviços de saúde; enfermeiras e enfermeiros; Iran.

formal and informal interactive activities performed to improve patients’ knowledge and behaviors in ways to achieve better health care outcomes.^{2,3} There is a growing body of research evidence that illustrates the effectiveness of PE on enhancing patients’ levels of empowerment,

self-care behaviors, compliance with health care recommendations, satisfaction in health care settings, and quality of their life, and reducing their levels of anxiety.^{3,4}

Nurses are the largest group of the health care providers. They are at the forefront of patient care, and spend the most time with the patients and their family members. This extensive contact provides excellent opportunities for providing patient and family education.² In addition, providing PE is both a legal and ethical responsibility of nurses.^{5,6} For all these reasons, PE is considered to be an integral part of high quality nursing care.³ Despite increasing availability of research findings and broad consensus on the importance of PE, there are many barriers to nurses' capacity to provide effective PE.² PE needs strict adherence to educational principles,⁷ so all variables that have an impact on teaching-learning process play an important role. Patients usually get involved in some type of limiting conditions that was imposed by their disease, aging and etc. Conditions such as functional and cognitive limitations, misconceptions, low motivation and self-esteem should be carefully addressed.⁸ Other factors such as environment, organization, interdisciplinary cooperation, collegial teamwork that are related to health care context also have unique role.⁵ However principles of education have been well-defined and widely recognized, environmental factors are unique in that significant differences exist among healthcare systems worldwide. Therefore it's necessary to investigate contextual factors effects on PE. Some studies even called for special attention to changing the environment in which patients care for themselves.⁹ It has been clearly demonstrated that contextual factors as a glass ceiling barrier could play a big role in PE, so it makes sense to investigate contextual factors in different countries in order to reveal the extent of potential discrepancy.

In Iran, nursing is the largest healthcare profession which is directly responsible for the care of their patients and has a central role in PE.¹⁰ Nevertheless; PE is a growing concern for the Iranian healthcare system as well. The results

of conducted studies about the topic in Iran have been demonstrated that the implementation of PE in nursing practice is often an undervalued intervention, thus poor education is one of the most common source of patient's complaints in the health-care sector.^{3,6} A study with aim to evaluate Iranian nurses' perceptions about PE showed that the majority of nurses believed that one of the major and important parts of their responsibility in caring of patients in daily clinical practice is PE. Nevertheless, they give a lower priority to it as compared to other nursing tasks such as medication administration, physical patient care, nursing care planning and documentation.⁸ Because contextual and country-specific factors may influence the implementation of PE, it is important to study facilitators and barriers to PE specific to the Iranian context.^{6,11,12} So the aim of the current study was to presents a comprehensive review of the literatures, exploring barriers and facilitators of PE among Iranian nurses, in order to identify strategies to promote enhanced PE within the Iranian healthcare system context.

Methods

A systematic search of the relevant literature were performed within international databases including PubMed/Medline, Scopus, ScienceDirect as well as Google Scholar search engine using the following search terms or their combinations: "patient education", "patients education", "patient teaching", "patient training", "nurse", "nurses", "nursing", "and "Iran". These keywords equivalents in Farsi were searched in Persian electronic databases such as Iranian Journal Database (Magiran), Scientific Information Databases (SID) and IranMedex (Iranian Biomedical Journal Database). In addition, a hand search of article references was done to ensure completeness of the search. The search was limited to the English and Persian languages. Applying no time limit, all articles having the selected keywords in the title, abstract and text, including quantitative as well as qualitative approaches in Iranian context, from conception up to September 2014 were included and evaluated. The articles had to be focused on

the barriers or facilitators of PE among Iranian nurses as inclusion criteria. We did not actively search the gray literature to find studies not in the peer-reviewed literature and excluded studies published exclusively in abstract form (e.g., conference proceedings), because they are not typically peer reviewed, and only partially report results which may change substantially when fully published.

The search strategy generated 4 000 titles and abstracts. After initial screening and evaluation by two researchers independently (HKM and AEZ), 3 933 articles were rejected and 67 articles were identified as potentially eligible for the review. These articles were retrieved for full text review. Removing duplicates and using secondary screening resulted in 26 articles to be included for the review. Also, a manual search of article references added a further one paper. In total, 27 peer-reviewed articles were eligible for final inclusion (Figure 1). Two authors independently extracted data from the studies including author and year, objective, method and data collection, sample and setting and key findings. Data were summarized into tables and compared to reveal organizing categories. Any disagreements were discussed and resolved by consensus. Extracted data were also coded and organized in order to facilitate analysis and weight categories. Coding process was employed using MaxQDA 10. This review included 27 studies which, including 20 that used quantitative designs, six that used qualitative designs, and one that used a mixed method design. All articles included in this review had been published between 2002 and 2014 and were published in peer-reviewed journals. Seven of the studies were conducted at the Tehran University of Medical Sciences affiliated hospitals. Sixty-two per cent (17 out of 27) of PE studies has only focused on barriers while 10 studies have reported both facilitators and barriers regarding PE simultaneously. Seventy-four per cent (20 out of 27) of PE studies have been designed cross-sectional descriptive method and other studies were used qualitative methods including content

analysis (18%), grounded theory and mixed method. Researcher-generated questionnaire has been used by all quantitative research that they were content validated.

Most studies have used convenience or stratified sampling. Some of them included only participants who had at least two years work experience. Eighty per cent (22 out of 27) of studies have collected only nurses' viewpoints and only five studies have included in other participants such as physicians, patients and patients' family members. Ninety-nine per cent of total sample were nurses (4281 out of 4340). All studies have collected their data in hospital. Thirty per cent of studies were originated from capital city of Tehran as most common place and only three cities have involved in twice. Figure 1 includes a summary of the articles that were included in this review.

Results

Perceived barriers to PE

The main barriers reported in the most papers can be categorized in three overall areas: 1) Nurse-related factors 2) Administration-related factors and 3) Patient-related factors. Overall, nurses have placed greater emphasis on nurse and administration related factors and less on patient-related factors.

Nurse-related factors. The most reported barrier in this area was "nursing shortage, excessive workload and inadequate time". The other barrier was "lack of knowledge among nurses about PE" including "lack of awareness of nurses about educational methods and teaching/learning principles", "lack of awareness and appropriate knowledge of nurses regarding patient's educational needs", "insufficient attention of nurses to the educational, cultural and habitual needs of patients and their families", "negative attitude to PE", "believing that patient teaching is not nurses responsibility", "lack of knowledge about illness" and "nurses' lack of communication skills".

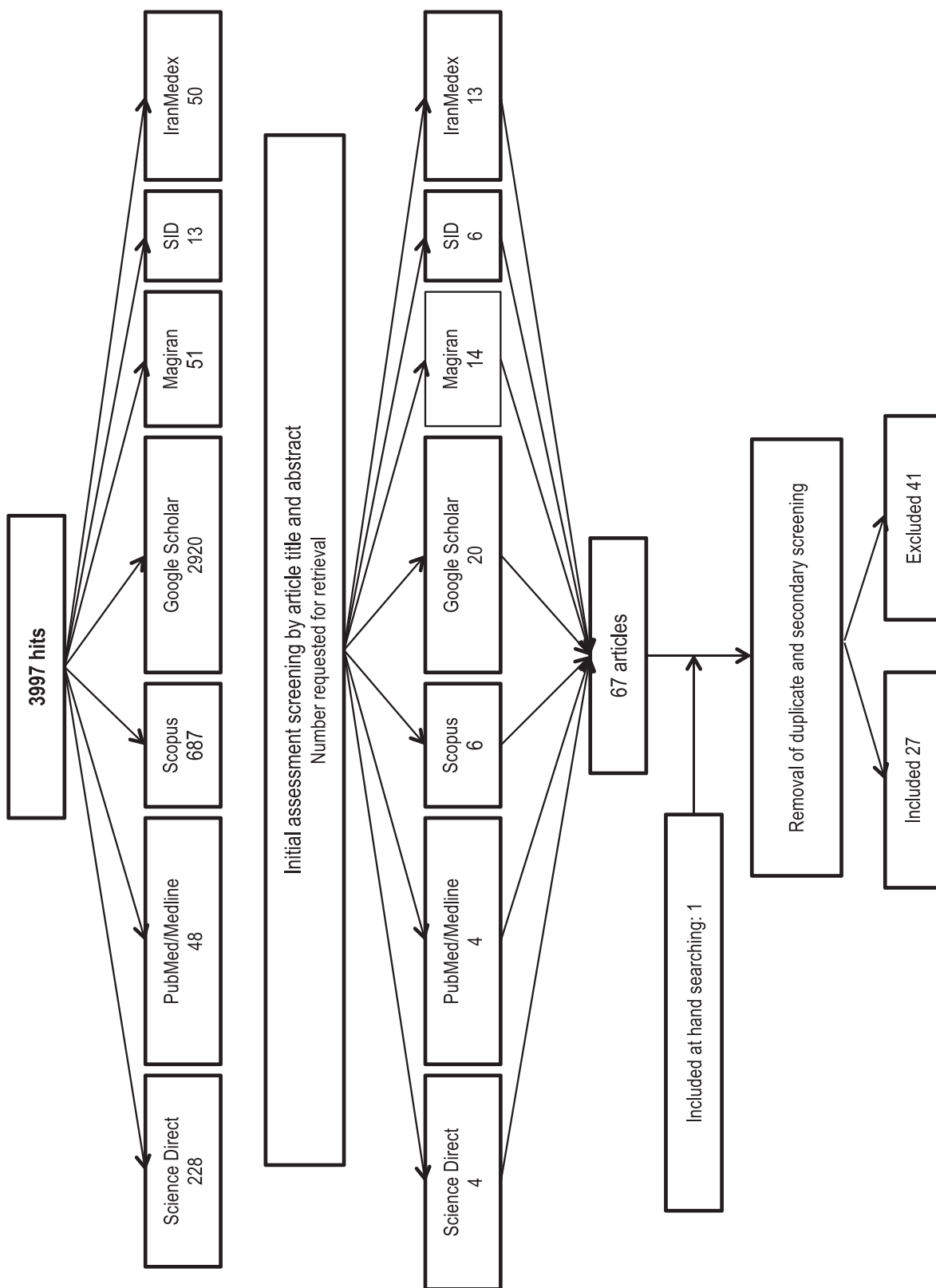


Figure 1. Literature search and retrieval flow diagram

Administration-related factors. The most barriers that perceived by nurses in this area were “inappropriate organizational culture” and “inappropriate place and facilities for PE”. Nurses believed that there is not a supportive culture among managers as well as hospitals, so there is no effective management and collaboration either. They have reported “inadequate support from the managers”, “lack of appropriate educational facilities in hospital”, “lack of specialized nurse for PE”, “no division of labor”, “lack of financial incentives for nurses”, “poor cultural adaptation for educator and patients in terms of sex”, “lack of coordination by other members of the healthcare professionals with nurses” and “lack of evaluating PE activities”.

Patient-related factors. The main patient-related barrier perceived by nurses in PE was patients have low compliance and readiness to receive PE. This barrier includes “Patient’s low literacy or illiteracy”, “lack of awareness of patients about the educational responsibility of nurses”, “knowledge deficit of patient about their rights”, “lack of patients’ interest to change their behavior”, “inconsistencies in the culture, social and mental status of patients and their families”, and “unwillingness to adhering to comments” were the most perceived barriers in this area.

Perceived facilitators to PE

The most perceived facilitators of PE that could be considered as potential strategies to promote PE were “selecting and training special nurses for providing PE” and “increasing nursing staff in each working shift”, “holding courses and seminars on teaching and learning strategies” and “providing appropriate place and facilities for PE”, “considering special privilege for PE in annual evaluation of nurses”, “development of more inclusive information guidance sheets to assist nurses in teaching specific topics to patients” and “developing PE protocols for each ward”, “enhancing patient’s interest and participation in education”, “increasing nurses interested to identifying the learning needs of the patients”, “registration of PE process in their medical record”,

“applying feedbacks for educational reform by nurses”, “revision in supervision and feedback system”, and “establishing a good relationship between patients, nurses and physicians”.

Discussion

There is a growing body of research literature that focuses on the barriers to and facilitators of PE perceived by nurses in Iran. The result of the present review showed that the inadequate time and nursing staff, heavy workload, inadequate support of managers, inappropriate organizational culture, and lack of appropriate educational facilities in hospital were reported as an administration related barriers to PE by Iranian nurses. The findings were supported by other studies have been conducted in other countries such as United States, China and Colombia that pointed out the nurses’ heavy workload as a major barrier to PE.³⁸⁻⁴¹ Also the result of the study by Barret et al. referred to additional time to teach patients, more educational materials, peers feedback regarding teaching effectiveness, and sufficient medical information as effective factors for PE based on nurses’ perspective.⁴² Nursing shortage is a serious issue in many Asian countries such as Iran; and nurses are practicing under an overwhelming workload.^{43,44} This issue results in less nurses being available for patients, and the resulting time restriction dissuade the nurses from providing the education for their patients.⁴⁵ In addition to the unbalanced nurse-patient ratio due to nurse shortage and large number of hospitalized patients, nurses are expected to do nonprofessional tasks such as coordinating, transporting patients and performing ancillary services which leading to increased workload. This excessive workload definitely affects the nurses’ decision to allocate enough time to various tasks such as communicating with patients and their education.^{46,47} The results of a study by Park *et al.* has been shown that although nurses consider PE as an essential part of their care planning, in the face of work limitations, they are not able to provide their education as needed. Also, patient education is basically informal and reactionary. Therefore, this activity can be considered as a low priority when nurses faced with time limitations.²

Table 1. Summary of the basic features of the research articles that were included in the review

Author & Year	Objective	Method and data collection	Sample & setting	Key Findings
Borhani¹³ 2002	To evaluate nurses and nurse-managers' opinion toward the importance of barriers of PE.	Descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	126 nurses and 50 nurse managers who worked in six hospitals affiliated to Kerman University of Medical Sciences were selected through census method.	The most important barriers to PE were: "lack of appropriate educational facilities in hospital", "lack of awareness of nurses about educational methods", "lack of awareness of nurses regarding patients' educational needs" and "lack of belief about educational role of nurses".
Goudarzi et al.¹⁴ 2004	Evaluation of the barriers and facilitators of PE from the viewpoints of nurses in hospitals of Tehran University of Medical Sciences.	Descriptive cross-sectional study was carried out. Data were collected by Honan questionnaire. ¹⁵	317 nurses working in hospitals of Tehran University of Medical Sciences were selected using stratified random sampling.	Shortage of nurses, lack of proper place, time and patient motivation for receiving education, nurses and nurse administrators' inattention to PE and negative attitude of doctors toward PE by nurses were most barriers to PE.
Mardanian Dehkordi et al.¹¹ 2005	Exploring the barriers and facilitators of PE from the viewpoints of nurses in hospitals of Esfahan University of Medical Sciences.	Cross-sectional study. Using a researcher-generated questionnaire.	259 clinical nurses and head nurses at hospitals affiliated to Esfahan University of Medical Sciences were selected through a stratified sampling method.	Top three barriers to PE were insufficient nursing staff, inadequate time on the job and lack of educational facilities. The most three important facilitators were allocation of one to two nurses for PE, providing more time for nurses to do it and development of more inclusive information guidance sheets to assist them in teaching specific topics to patients.
Heshmati Nabavi et al.¹⁶ 2006	Identifying administrative barriers to PE and their ranking from the viewpoint of nurses.	Descriptive study. Using a researcher-generated questionnaire.	65 nurses and nurse managers at a one hospital which affiliated to the Tehran University of Medical Sciences selected through proportional sampling.	The most important barriers to PE were: patient's low literacy levels or illiteracy, inadequate time for nurses, inadequate educational facilities, and lack of financial incentives for nurses.
Hekmatipour et al.¹⁷ 2007	Evaluating patient education process and answering to these questions: 1- What is the process of PE? 2- What are the barriers of correct implementation of PE?	Qualitative study using a content analysis approach was used. Data were collected through semi-structured interviews.	33 nurses and nurse students and 10 hospitalized patients were included. The setting of the study was schools of Nursing and Midwifery and 2 general hospitals affiliated to Arak University of Medical Sciences.	The study findings showed that factors related to: 1- Curriculum planning in schools of nursing and midwifery 2- PE courses 3- Insufficient attention to nurses conditions 4- Insufficient attention to educational, cultural and habitual needs of patients and their families 5- Educational management and 6- Attitude of participants to PE, were key issues in the process of PE that was related to inappropriate implementation of PE in clinical settings.
Mazaheri et al.¹⁸ 2007	Evaluation the barriers of PE for elderly patients from the health personnel's point of view in Ardabil.	Descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	380 health professionals including nurses, physicians, and nursing and medical students working in hospitals affiliated to Ardabil University of Medical Sciences were selected using purposeful sampling.	Poor collaboration between health professionals in PE, excessive workload, inadequate time, and inadequate attention to PE were the most perceived barriers.

Table 1. Summary of the basic features of the research articles that were included in the review (Cont.)

Author & Year	Objective	Method and data collection	Sample & setting	Key Findings
Abbasi et al.¹⁹ 2008	Identifying perceived barriers to PE by nurses and providing a model for its facilitating in teaching hospitals affiliated to Qom University of Medical Sciences.	Descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	351 nurses and head nurses, who worked in teaching hospitals affiliated to Qom University of Medical Sciences, were selected using convenience sampling.	Most important perceived barriers were: "Lack of awareness of patients about the educational responsibility of nurses", "the large number of hospitalized patients", "no division of labor" and "time-consuming nursing tasks such as patient care and documentation". The most important facilitators were found to be: "time dedication for PE", "allocation of one to two nurses for PE" and "preparation of financial sources for nurses".
Moridi et al.²⁰ 2009	Determine the viewpoints of nurses about PE, and its perceived barriers and facilitators.	Descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	155 nurses who worked in teaching hospitals affiliated to Kurdistan University of Medical Sciences were selected through census method.	Lack of knowledge and skills for identifying the specific needs of the patients, insufficient nursing staff, insufficient time, and non physical and mental readiness of patients' for education were the most perceived barriers to PE. The most perceived facilitators were the patient's interest and participation in education, nurses interested to identify the learning needs of patients, appropriate setting for education and considering the special points for performing PE at annuals appraisal.
Ashghali-Farahani et al.²¹ 2009	Identifying an obstacle which leads to the lack of effective PE based on nurses', physicians' patients' and family member of patients' viewpoints.	A qualitative research approach (grounded theory) was used. Data were collected using open-ended interviews and field observations.	18 nurses, 4 cardiovascular specialists, 9 patients with cardiovascular disease and 4 family members were selected interviewed at two educational hospitals in Tehran through Purposeful Theoretical sampling.	Ineffective management, inappropriate organizational culture, and cultural obstructs were the most barriers to PE. Organizational culture played an important and central role in PE.
Aziznejad et al.²² 2010	Identifying the potential implementation barriers in the PE program from the point of view of nurses and nurse managers working in the Babol university of medical sciences affiliated hospitals.	Cross-sectional study. Data were collected by a researcher-made questionnaire.	150 nurses and nurse managers, with at least 6 month of nursing experience, in the hospitals affiliated to Babol medical university from were selected through census method.	The most important barriers to the PE were as follows: lack of proportionality between the number of patients and nurses, time pressure and excessive workload, lack of attention and adequate support from the managers, lack of proper environment and educational equipment in the hospital, and lack of coordination of other health care professionals with nurses.
Rostami et al.²³ 2010	Evaluation of barriers to PE from the viewpoint of nurses and patients.	A descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	50 nurses with at least one years of working experiences in one hospital affiliated to Tabriz University of Medical Sciences were selected using the census method.	From viewpoint of nurses, major's barriers were knowledge deficit of patient about their rights, lack of patients' interest to change their behaviors, nurses different set of responsibilities, inadequate nursing staff and budget, inadequacy of educational environment, and disagreement between different specialists.

Table 1. Summary of the basic features of the research articles that were included in the review (Cont.)

Author & Year	Objective	Method and data collection	Sample & setting	Key Findings
Beiranvand et al.²⁴ 2010	Identifying the barriers in PE from the view point of nurses and nurse managers in the hospitals affiliated to Ahvaz University of medical science.	A descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	100 nurses and nurse managers, who worked in the hospitals affiliated to Ahvaz medical university in 2012, were selected by convenience sampling method.	The most important barriers to the PE were; lack of proportionality between the number of patients and nurse staff, time pressure and excessive workload, lack of attention and support from managers regarding PE, lack of coordination between nurses and other health care professionals.
Hekari et al.²⁵ 2010	Determine quality of PE by nursing students and staff nurses and its effective factors in Tabriz hospitals.	A descriptive cross-sectional study was carried out. Data were collected by a researcher-made questionnaire.	352 staff nurses and 241 nursing students in Tabriz were selected through stratified random sampling.	The most important perceived barriers by nurses were: increased number of patients, inadequate time, inadequate nursing staff, lack of proper environment and educational equipment in the hospital, and lack of cooperation between health care professionals. The most perceived facilitators includes: patient's interest and participation in planning and implementation of education to them, selecting and training specially nurses for PE, availability of educational equipment in the ward, and taking a special privilege for PE on an annual assessment of nurses.
Mansour ghenaati et al.²⁶ 2011	Evaluating staff nurses' opinion regarding the importance of PE and determination of its main facilitators and barriers.	Descriptive cross-sectional study. Data gathering instrument was a researcher-generated questionnaire.	99 nurses who are worked in governmental hospitals in East of Guilan province were selected through the census method.	"The patient's interest and cooperation in planning and executing the education" was the most important facilitator and "selecting and educating of special personnel for providing PE" was the least important facilitator in PE. "Lack of appropriate knowledge and skills regarding recognition of patient educational needs" was the most important factor and "poor cultural adaptation for nurses and patients in terms of sex" was as the least important factor act as barriers to PE.
Haddad M.²⁷ 2011	To assess barriers in PE from nurses' viewpoints working in Birjand hospitals.	Descriptive cross-sectional study. Using the researcher-made questionnaire which assess the view point of nurses regarding barriers to PE in four domains: "management", "working condition" "nurses attitude" and "training skills".	125 nurses who employed and worked in all Birjand hospitals with at least 1 years of working experience were selected through census sampling.	"Working conditions" was the most important out of four domains of barriers for PE. The following areas consisted of: "management", "training skills" and "nurse's attitude".
Vahedian Azimi et al.²⁸ 2011	Evaluate nurses' problems in PE.	Descriptive cross-sectional study. Data gathering instrument was a researcher-generated questionnaire.	145 nurses, working in different wards, working in a hospital affiliated to Tehran University of Medical Sciences were selected through simple random sampling.	The most common perceived barriers to PE were: no specialized nurse for PE, inconsistencies in the culture, social and mental status of patients and their families, and nurses' low level of knowledge of nurses about educational methods.

Table 1. Summary of the basic features of the research articles that were included in the review (Cont.)

Author & Year	Objective	Method and data collection	Sample & setting	Key Findings
Farahani et al.²⁹ 2011	Exploring communication barriers from the perspective of nurses themselves, as well as physicians, patients and families in a hospital-based cardiac care setting.	A qualitative study using a content analysis approach. Using face-to-face, semi-structured interview.	18 nurses with at least 2 years of working experience in the cardiac care unit and post cardiac care unit ward, four cardiovascular physicians, nine patients with known cardiac disease and four family members of two educational hospitals in Tehran were selected using purposive sampling technique.	The three major themes identified were: 1) lack of collegiality and communication between nurses and physicians; 2) problematic communication between the health-care team, patients and their families; and 3) cultural challenges.
Vahedian Azimi et al.³⁰ 2012	Describe nurses' experiences of barriers and facilitators of PE in year 2008 at Shariati Hospital in Tehran.	Triangulation research with three steps Delphi method was used. Data collection methods were an unstructured interview, followed by a questionnaire from interviews, and in the third step, focused groups.	Participants included 25 nursing staff (1 matron, 8 supervisors, 8 head nurses and 8 nurses). Data were collected in the nursing office and different wards of Shariati Hospital, a teaching hospital affiliated to Tehran University of Medical Sciences.	Most important barriers were: nurses' low scientific knowledge and information, shortage of nursing staff, excessive workload, inappropriate clinical supervision and feedback, and extra tasks demanded due to working in a teaching hospital. The most important facilitators were found to be: developing PE protocols for each ward, modification in supervision and feedback system, establishing a good relationship between patients, nurses and physicians, assigning a rotating nurse for PE.
Aghakhani et al.⁶ 2012	Explore nurses' attitudes to the barriers of PE.	Cross-sectional study. The data was gathered with a two part researcher-made questionnaire.	240 nurses, who worked in university affiliated hospitals of Urmia, were selected using census method.	Most of the nurses believed that PE is not their duties. Most important perceived barriers by nurses include: inadequate facilities in hospitals and also inadequate time.
Ghobadi et al.³¹ 2012	Identifying the barriers and facilitators of PE from the viewpoints of nurses and head nurses in hospitals of Shiraz University of Medical Sciences.	Descriptive cross-sectional study. Data were collected by a researcher-made questionnaire.	106 nurses who worked in medical or surgical wards of selected hospitals affiliated to Shiraz university of medical sciences were selected thorough stratified random sampling.	The most important perceived barriers by nurses were: "inappropriate nursing staff", "knowledge deficit", "inadequate time", and "lack or inadequate support from the managers". The most important facilitators were found to be: "holding continuous medical education program to increase knowledge and attitude of nurses", "increasing nursing staff in each working shift", "providing appropriate place and facilities for PE".
Farahani et al.³² 2013	Exploring factors influencing PE from the perspectives of nurses in Iran.	Qualitative study using a content analysis approach was used. Data were collected through face-to-face audio-taped interviews and field observations.	18 nurses with at least 2 years of working experience who worked in two educational hospitals which affiliated to Tehran University of Medical Sciences were recruited and interviewed; using a purposive sampling technique.	The major theme extracted in this study was the inappropriate organizational culture which includes eight categories listed as follows: Not putting value on education, non-professional activities, physician-oriented atmosphere, conflict and lack of coherence in education, inappropriate communication skills, ignoring patient's right in education, lack of motivation, rewarding system in the organization, and poor supervision and control.

Table 1. Summary of the basic features of the research articles that were included in the review (Cont.)

Author & Year	Objective	Method and data collection	Sample & setting	Key Findings
Sultani et al.³³ 2013	Explore the barriers to PE from the viewpoints of nurses and nurse managers in hospitals of Rafsanjan University of Medical Sciences in 2008.	Descriptive cross-sectional study was carried out. Data was collected by researcher-made questionnaire.	253 nurses and nurse managers, who worked in affiliated hospitals to Rafsanjan University of Medical Sciences in 2008, were selected and evaluated through census method.	The most perceived barriers to PE were "lack of appropriate supervision and encouragement from the managers", "inappropriate time", "excessive workload", "Lack of awareness of patients about the education as a patient's right", and "the nurses' lack of appropriate skills in PE".
Alavi et al.³⁴ 2013	Exploring patients/family members and health professionals' perceptions and experiences of the barriers to cardiac rehabilitation education in an Iranian context.	Qualitative study using a thematic analysis approach was used. Data were collected through in-depth, semi-structured interviews	Participants (10 health professionals, 15 patients/family members) were recruited from two educational-medical centers and hospitals in Isfahan using Purposive sampling	Five major barriers were identified relating to human resources, service provision, available educational services, unfavorable attitudes and collaboration gaps. Two main challenges exist to the provision of effective PE; inadequate human resources in the hospital wards, specifically in terms of trained health care professionals and service users' specific health related views and behaviors.
Ghorbani et al.³ 2014	Describe the attitudes of Iranian nurses and nursing students on barriers and facilitators to PE.	Descriptive study was conducted. Using a researcher-made questionnaire	All nurses (103) delivering direct patient care and all baccalaureate nursing students (second and third-year students) receiving education in the nursing wards in hospitals affiliated to Semnan University of Medical Sciences at the time of data collection were evaluated.	All nurses and the majority of the nursing students mentioned that they performed PE. The nurses stated that heavy workload, inadequate time and lack of educational facilities were main barriers to PE. The students believed that lack of knowledge, lack of communication skills and heavy workload were main barriers to PE from their perspectives.
SaeidPour et al.³⁵ 2014	Assessing nurses and doctors viewpoints on obstacles and facilitators PE.	Descriptive cross-sectional study. Data were collected by a researcher-made questionnaire.	85 nurses and doctors who worked in Kermanshah Razi hospital were selected by Simple Random Sampling method.	Top three barriers to PE were: shortage of nurses, lack of sufficient financial resources, and nurses' excessive workload. While, holding seminars on teaching and learning strategies and also considering special privilege for patients' education in annual evaluation of nurses were most important perceived facilitators.
Dehghani et al.³⁶ 2014	Determine barriers to PE from nurses' viewpoints.	Descriptive cross-sectional study was conducted. Data were collected by a researcher-made questionnaire.	271 nurses, who worked in teaching affiliated hospitals of Jahrom University of Medical Sciences, were selected through census method.	The most important barriers were: lack of time due to workload, lack of PE planning for nurses in their daily work as a duty, and the unknown role of the nurses as a teaching agent to the patients and the community.
Esteki et al.³⁷ 2014	Evaluating nurses' perception of PE in the CCU ward of Valiasr Hospital, Birjand, Iran.	Qualitative study using a content analysis approach was used. Data were collected through semi-structured interviews.	11 nurses of CCU wards who worked in the Valiasr Hospital of Birjand, were recruited by purposeful sampling	Three themes have emerged including culture, knowledge of the patient's background, and education process suited to patients' culture and society.

Inadequate support of managers, particularly in case of appropriate time allocation for nurses' teaching activities and ineffective coordination of educational responsibilities among disciplines is a barrier to PE.^{38,48} Managerial and organizational support is an important element for the implementation of high-quality PE.^{49,50} The result of a study that was conducted in Iran showed that nurses were well informed of the importance of patient education and had accepted this role in clinical settings, but no managerial support was available to them for doing this activity.³ Moreover, other studies showed that hospital managers have less emphasize on PE.^{2,51} Modifying administrative support is crucial for effective PE. The context in which care is delivered, such as staffing levels, prioritizing of different aspects of care, provision of resources and support of other healthcare team members, influence the quality of PE.³ It been shown that PE was a less important task of healthcare professionals from the nurse managers' perspective.⁵¹ PE was improved through changes in the management style, development of educative materials, and patient education protocols.³ Inappropriate educational facilities in hospital were one of the barriers perceived by Iranian nurses for PE. Accessibility of teaching materials is an important component to facilitate PE.⁴⁰ It is known that face-to face PE time can be reduced by using paper materials and facilitate what must be transmitted to patients.⁵¹ It is important to provide teaching materials which are easily understood and are consistent with cultural issues and social norms.⁵² Allocation of specific space in every work-place setting for PE and assigning responsibility for this activity to one specialist nurse in the each ward by managers are another recommendations to improve and develop PE.⁴⁹

Patient's low literacy or illiteracy and cultural diversity of patients and nurses were among the most patient-related barriers perceived by Iranian nurses. Teaching is a dynamic process and is influenced by social and cultural factors. Thus, nurses must be sensitive to the effects of values, religion, language, cultural and socioeconomic factors.⁵² It seems that conflict among nurses

and patients' beliefs can intensify the problems in PE. People strongly protect their cultural values and also they expect everyone to respect it.⁵³ In a study that conducted by Heidari *et al.* have been shown that there is much cultural diversity among patients and concluded that all nurses are expected to be more sensitive to the cultural factors such as language, lifestyle, and social status of patients and their families in their education.⁵² Considering the cultural diversity backgrounds of patients and the health care providers, cultural sensitivity is an essential factor in improvement of comprehensive PE plans.⁵⁴ Patients' lower educational level and severity of illness prohibit their educational compliance.⁴⁰ Most of the hospitalized patients in Iran are elderly with inadequate level of health literacy.³ Patients' health literacy, as a resource which allows them to seek, understand and use health information, is an important determinant of their participation and engagement in their health care.⁵⁵ Many patients may be able to read and write, but have trouble to understanding basic health information. Health literacy, as a set of individual capacities may be improved through educational programs or declined due to aging and disease process.^{3,56}

Nurse-related barriers such as lack of awareness of nurses about educational methods and teaching/learning principles, believing that patient teaching is not nurses' responsibility, and lack of knowledge about illness, were mostly perceived by Iranian nurses. For PE, the nurses must be aware of the learning pattern of patients, which includes visual, auditory, and kinesthetic. Once the learning style is established, the nurse adapts the preferred teaching strategies and methodologies to that style.⁵⁶⁻⁵⁸ Assessing patient learning style, in combination with the context in which learning occurs, allows for an individualized approach that incorporates teaching modalities to maximize patient learning.⁵⁹ Disagreement between patients, nurses, and physician regarding responsibility of PE is another perceived barrier to patients' education by nurses in Iran. Moret *et al.* found that nurses and physicians did not agree on patient information materials, so that nurses considered their role to be more important than what the

physicians gave them.⁵⁰ However, this finding is inconsistent with that of Park's study, in which nurses stated that information about medicine and treatment was not their responsibility.² On the other hand, there is incongruence between nurses' and patients' perceptions regarding the nurses' role in PE. Patients acknowledged a general teaching function for nurses; but when they were asked who they prefer to teach them specific information related to their situation, they most frequently chose a physician. Whereas the nurses most frequently acknowledged a nurse as the most desired patient educator.⁶⁰

One potential limitation of this review was that we did not search the gray literature to find studies not in the peer-reviewed journals. Although we identified all papers that met our inclusion criteria, unpublished studies may be missed. However, our electronic search was extensive and complemented by hand-searches, so that the saturation was achieved. Another limitation was most of the studies have used investigator-developed instrument, so it may violate rigor of the studies. The results of our review indicate that, Iranian nurse's encounter with somewhat high barriers in PE; so that of these, administration-related barriers were the predominant obstacle in order to bring evidence into clinical applicability. Therefore, health managers are expected to plan appropriate strategies to smooth the progress of PE by nurses in their practice.

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