

Patient perceived quality of nursing care in hemodialysis: A meta-synthesis

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Abstract

This study was done with the purpose of clarifying the concept of patient perceived quality of nursing care in hemodialysis. In this meta-synthesis study, qualitative studies was searched in the four international databases from January 1st, 2000 to December 30th, 2019. The keywords used were: nursing care quality, and hemodialysis. Studies which had been done with the purpose of understanding the patient perceived quality of nursing care concept among hemodialysis patients were included. Two researchers were evaluate the quality of included studies separately using JBI tool, required information were extracted using the designed table. The main themes in the structure dimension include Sufficient Human resource, quality of equipment, financial support from patient and quality of the patient care environment. Process dimension consisted of continuous monitoring of the syndromes, effective patient education, efficient care, effective therapeutic relationship, and patient's empowerment and participation in the process, and in the outcome dimension included high dialysis adequacy, patient burnout reduction, and increased patient satisfaction from services. The results of the study indicated a comprehensive, deep and interactive dimensions about the concept of nursing quality of care.

Introduction

Today, chronic diseases including chronic kidney disease (CKD) consider as one of the most important health challenges.

The prevalence of CKD in the world and Iran is 13.4%¹ and 15.6%,² respectively. Of the 500 million people with CKD, about 80 percent of them live in less developed countries.³ Asia, which have 60 percent of the world's population, has the highest prevalence statistics of infected with CKD.⁴ In over 90% of CKD patients, hemodialysis is the only treatment option.⁵ In Iran, the number of patients with CKD is about 84,000, of which more than 82,000 (89%) are undergoing hemodialysis.⁶ Using hemodialysis while saving millions of lives, is accompanied with various physical complications (vascular access complications, cardiac complications, gastrointestinal bleeding, cancer, bones metabolism disorder, ineffective dialysis adequacy, skin problems, anemia, loss of appetite, muscle cramps and psychological complications (sleep disorder, depression, fatigue, reduce the quality of life and anxiety).⁷ On the other hand, better care in hemodialysis patients causes improving therapeutic indicators in patients.⁸

Health policy-makers around the world face to challenge of quality of cares provided for chronic diseases, because more than 50% of the burden of diseases belongs to chronic non-contagious diseases such as CKD.⁹ Nursing care quality has also been changed in to a central principle in the health cares of patients with CKD. Various definitions have been presented by organizations and experts about the concept of care quality. According to the definition of American Medicine Institute, "Quality of care (or care quality) is a degree of providing health cares to individuals and populations that maximizes desired health outcomes and is consistent with current professional knowledge."¹⁰ Quality of care is defined by the World Health Organization as: to what extent services provided to individuals and patients would reach them to mentioned health outcomes. That to reach this goal, the cares must be safe, effective, efficient, timely, fair and people-oriented.¹¹ Experts also provided different definitions on quality of care. Donabedian considers the quality of care as performing all necessary measures to help the patient which reflects the present values and goals of the individual and the care system.¹² Having agreement on a correct and clear definition of the nursing care quality can promote the health, support, and correct education of patients.¹³ Today, the perceived care quality from the perspective of the patient is raised as one of the main components of care in the health system.¹⁴ Paying attention to the patient's perspective leads to increase quality of life, safety level, private satisfaction associated with disease progression, and

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knowledge. The outcome for the system can also be reduction of new beds rate (readmission), optimal use of resources, and providing more service with more cost-effective.¹⁵ On the other hand, various studies show a positive relationship between attending to patients' perspectives and increasing the nursing care quality of patients and increasing their satisfaction.¹⁶ Although the concept of nursing care quality has been clarified to some extent from the perspective of organizations¹¹ and experts¹⁷ and nurses,^{18,19} the reviewing literatures indicate that this concept has been less evaluated by patients under hemodialysis who have different conditions in terms of complications, symptoms, severity of illness, concomitant

illnesses, and required care and have main contribution in the care chain. It is also very essential to pay attention to patients' opinions through understanding the various psychological, emotional, physical, social dimensions of patients and, as a result, a deep understanding of patients' needs for doing holistic care. This study was done with the aim of clarifying the concept of patient perceived quality of nursing care from the perspective of patients undergoing hemodialysis based on existing studies.

Materials and Methods

Design and eligibility criteria

In this meta-synthesis study, qualitative studies related to the experiences of hemodialysis patients on the quality of nursing care was evaluated using a systematic review approach. Inclusion criteria in this study include: known patients undergoing hemodialysis who had passed at least 6 months from their first dialysis session. The included studies were qualitative and were published in English. Exclusion criteria: review studies, quantitative studies (cross-sectional, RCT, case control, case report, case series, and letter to editor) were excluded.

Search strategy

Four international electronic databases include: web of science, PubMed, Scopus and Embase searched from January 1st, 2000 to 30 December 30th, 2019. The articles were searched in three stages. First, a targeted and centered search in PubMed and Scopus was conducted with the purpose of finding the most relevant articles using related keywords. Then, a comprehensive search was performed in all selected databases. The search strategy was written by two researchers (AB, AE) with the advice of a librarian expert. In the third step after searching the databases, the sources of related articles were also evaluated to find more articles.

Screening the studies

The studies searched in the various databases were included Indentot. Duplicate studies were initially removed. In this way that firstly duplicate studies were evaluated based on title and duplicate studies were excluded, then the remaining studies were reviewed and excluded based on their abstract. In the final step, the full-text version of the articles was evaluated based on the inclination criteria and the irrelevant items were excluded. Screening the studies were performed separately by two

researchers (AB, SP). The disagreement between the two persons was discussed and resolved by a third party.

Evaluation of studies quality and data extraction

The JBI tool for qualitative studies was used to evaluate the quality of the included studies.²⁰ This tool was consisted of 10 items which assessed the methodology and how to report qualitative studies. Two researchers individually performed the evaluation of the studies quality. Disagreement cases between two persons were being resolved by a third party. Data extraction was performed using data extraction tables in Excel and Word. The extracted data included: article number, author, year of publication, country, title, purpose of study, number of participants, method of work, data collection, analysis method and main results and themes.

Data analysis

Thematic approach of analysis was used for data analysis. In this approach, the codes were systematically classified and the descriptive and analytical themes were clarified and analyzed. First, the results of the included studies were studied line-by-line, and then the cases related to the purpose of the study were clarified as free codes and in

the following similar and different codes were identified through constant comparison. Similar codes were then named as descriptive themes, and in the final step, the themes were identified analytically and abstractly, and together were formed the definition of concept of perceived nursing care quality from the perspective of the patient.²¹

Results

Select the studies

The 4,386 searched records in various databases have been included in Indentot. 3474 non-duplicated studies were evaluated on the basis of title and abstract, of which 24 records entered the final stage. Out of 24 included studies, 6 studies were included in meta-synthetic and 18 studies were excluded [review (n=2), non-english (n=10), no quality (n=1), no full text (n=5)] (Figure 1).

Characteristics of included studies

Out of the six included studies, 4 studies were conducted using the content analysis approach and 2 studies were conducted through Focus Group on 189 participants. Data were collected through semi-structured interviews in all studies. In most stud-

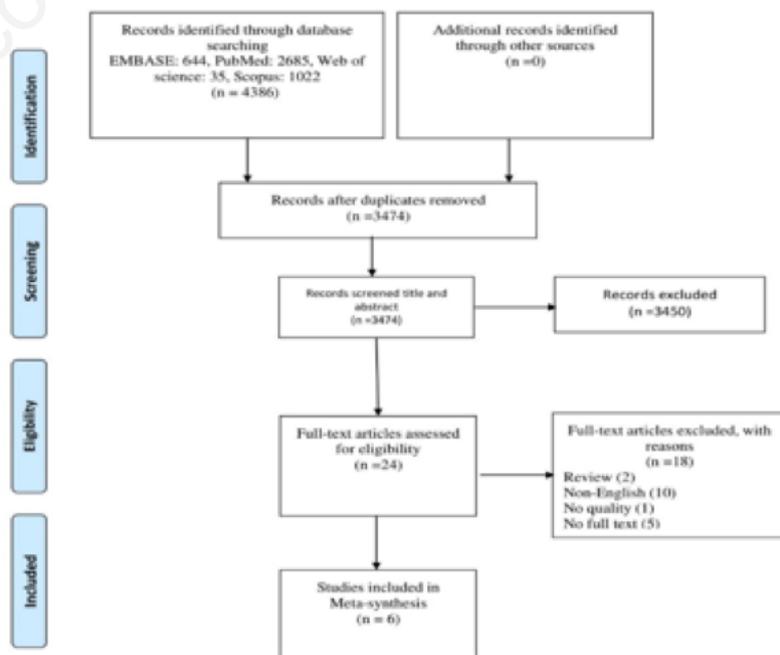


Figure 1. Studies selection process.

ies (n=5), data were analyzed using content analysis method (Table 1).

Main results

The most well-known model used to classify care quality components is the Donabedian model, which classifies the quality of cares provided into three parts: structure, process, and outcome (25). The perceived nursing care quality from the

patients' perspective was consisted of three main themes: structure, process, and outcome (Figure 2).

The structure of perceived quality of nursing care

Proper structure of perceived nursing care quality from the perspective of patients was composed of four different sub-themes including: sufficient human resource, quali-

ty of equipments, financial support from patient and adequacy of the patient care environment.

Sufficient human resource

Sufficient Human resource is one of the main components of quality care from the patients' point of view. Sufficient Human resource means appropriate number of nurse, kidney specialist, nutritionist, social

Table 1. Characteristics of the studies

ID	Author (year)	Country	Purpose of study	Study design	Sample characteristics 1.participants 2.population 3.age 4.gender (female/male)	Data collection	Data analysis	Main results
1	Rubin, H. R. (1997) 24	USA	We conducted a study to identify salient attributes of dialysis care and to rank the importance of these attributes from the perspective of dialysis patients.	Focus group	1.86 2.patients, nephrologists 3.56.1 4.40/46	Focus group with interview	Content analysis	<ul style="list-style-type: none"> ✓ Sufficient human resource ✓ Quality of equipment used ✓ Quality of patient care environment ✓ Effective patient education ✓ Financial ability and insurance support
2	Wuerth, D. B. (2000) 25	USA	Patient Assessment of Quality of Care in a Chronic Peritoneal Dialysis Facility	Focus group	1.30 2. Patients 3.57 4.13/17	Structured interview	Thematic analysis	<ul style="list-style-type: none"> ✓ Efficient care ✓ Sufficient human resource ✓ Effective patient education ✓ Quality of dialysis environment
3	Rodrigues, T. A. (2009) 26	Brazil	To describe the representation of nursing care for nurses and for individuals undergoing hemodialysis	Qualitative study-content analysis	1.12(6 n.6p) 2. Patients, nurses 3.62 4.15/8	Semi-structure interviews	Content analysis	<ul style="list-style-type: none"> ✓ Therapeutic communication ✓ Patient participation in treatment ✓ Participation in decision making
4	Nobahar, M. (2016) 23	Iran	"The aim of this study was to assess the barriers and facilitators of care for hemodialysis patients."	Qualitative study- content analysis	1.20 2.patients, nurses, physicians, caregivers 3.51.37 4. None reported	Semi-structured interviews	Content analysis	<ul style="list-style-type: none"> ✓ Effective communication between nurses and patients. ✓ Sufficient human resource. ✓ Correct policy making to support dialysis. ✓ Effective and efficient environment.
5	Nobahar, M. (2017) 18	Iran	"he present study was conducted to explore the experiences of the quality of nursing nurses, caregivers and care among patients, physicians in an HD department in Iran.	Qualitative study- content analysis	1.20 2. Patients, nurses, physicians, caregivers 3.51.37 4.none reported	Semi-structured interviews	Content analysis	<ul style="list-style-type: none"> ✓ Continuous monitoring of the patient by the nurse. ✓ High dialysis adequacy. ✓ Burnout ✓ Effective patient education ✓ Effective empowerment in doing activities ✓ Sufficient human resource. ✓ Communicate effectively. ✓ Quality of equipment used. ✓ Effective and efficient environment.
6	Hashemi, M. S. (2018) 22	Iran	"Thus this research was undertaken to study the needs and demands of such patients."	Qualitative research- content analysis	1.21 2. Nurses, nephrologist, clinical psychologists, social workers. 3.51.37 4.none reported	Semi-structured interviews	Content analysis	<ul style="list-style-type: none"> ✓ Effective symptoms management ✓ Effective full- support ✓ Quality of the nursing services delivery ✓ Sufficient human resource ✓ Communicate effectively ✓ Effective infection control ✓ Quality of equipment.

helper who have the sufficient training knowledge and skill to care of patients undergoing hemodialysis. Also, Sufficient Human resource means professional human power behavior (being accessible and on time).^{18,22-25}

“The nurse should have enough information about kidney and electrolytes, because a small error in the selection of filter, blood flow, and UF could lead to the worst electrolytic problem.” (Study 4)²³

Quality of equipment

The quality of the used equipment is: a sufficient number of different equipment (dialysis machine, dialysis set, etc.) that are new and have a correct performance.^{18,22,24,25}

“Whenever a new dialysis machine is brought in, another one breaks down, and who knows when this other one is going to be repaired? There is always a shortage of machines in the department.” (Study 5)¹⁸

Patient financial support

Financial ability has always been one of the most important factors in clarifying patients' following rate to diet to achieve nursing care quality. Various studies have shown that patients undergoing dialysis are financially troubled with respect to poor economic backgrounds, losing job in most of the time to provide medicines, physician visits to control long-term complications of dialysis, and following from diet.²²⁻²⁴

“Whenever I visit a physician's office, I have to pay a sum of money. Visits, tests and medicines must be paid for after all. If all the patients were regularly paid for their

steady jobs, there would be no problems. But how can you afford the medication and in-dwelling catheters when you are out of a good job”. (Study 6)²²

Quality of environment care

The proper environment is one of the key factors in the perceived care quality from the perspective of patients. Suitable environments means physical conditions (appropriate light, temperature, and sound), audiovisual equipment, patient rest room, cleanliness of the ward, comfort and being standard of dialysis bed, maintaining patient privacy, and parking.^{18,24,25}

“The beds are too close to each other in the ward, and there is little room between the bed and the machine, and 13–14 patients undergo dialysis at the same time in this tiny space.” (Study 5)¹⁸

The process of perceived quality of nursing care

The process of perceived nursing care quality from the patients' point of view was consisted of five sub-items: continuous monitoring of syndrome, effective patient education, efficient care, effective therapeutic relationship, and participation, empowering the patient in the care process.

Continuous monitoring of the syndrome

Continuous monitoring of the physical and psychological state of patients before, during and after dialysis is one of the main duties of the therapeutic team, especially nurses, who spend more time with the patient. Patients undergoing dialysis experience usually high stress due to being attached to the device and hemodynamic

changes during dialysis. The most important physical stressors include fatigue, weakness, nausea and vomiting and appetite problems, respiratory complications, and complications during hemodialysis including hypotension, headache, and muscle cramps. Therefore, continuous attention to these patients is needed.^{18,22}

“I spend four hours under this dialysis machine, and every second of it is still part of my life. The nurses should be in of everything. My nurse calls on me every 15 minutes or so and checks my blood pressure.” (Study 5)¹⁸

Effective patient education

From the patients' point of view, training to the patient effectively, especially immediately after the disease diagnosis and at the beginning of dialysis, have a significant contribution in improving patients' health patterns and improving the nursing care quality. The key components of a correct education to patient from the patients' point of view are the number of educational resources, rich content and patient's problem-related content that are based on the latest medical information, and people who provide this explanation patiently and completely.^{18,22,24}

“We begin calcium carbonate therapy with three pills, but the patient takes one every day and may develop bone disease as a result. The patient does not have adequate knowledge about these therapies, although a lot of their problems tend to disappear when you explain everything to them, and then they begin to understand why they have developed spontaneous fracture of the femur, and why their phosphorus levels are so high, and why their hands and feet hurt.” (Study 5)¹⁸

Efficient care

Efficient care means to provide sufficient competence of dialysis ward to provide services, pay attention to the patient's needs in the ward, atmosphere between human power, and pay attention to patients concerns.²⁵

“They are always there if you need them,” and “they always listen to my concerns.” and “the staff is like a family.” (Study 2)²⁵

Effective therapeutic relationship

Effective therapeutic relationship as an important component of the perceived nursing care quality from perspective of patients undergoing hemodialysis means time spent for communicating with the patients by the treatment team, having intimate, friendly

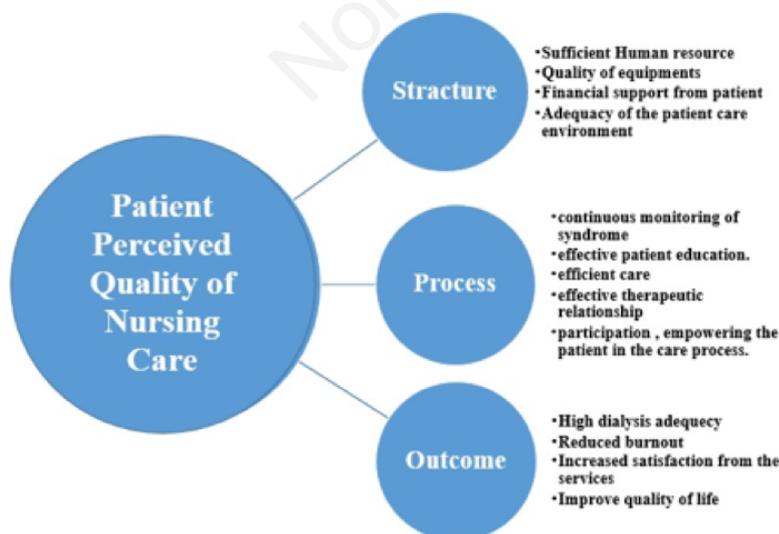


Figure 2. Patients' perceived quality of nursing care concept in hemodialysis patients.

and mutually respect relationship so that patients experience the feeling of taking care in the dimensions of physical, emotional, health, and getting well of all members of the dialysis ward.^{18,22,23,26}

“Being cared related to health, social, feelings and well-being through the entire clinic: doctors, other patients (my partners), nurses, workers in general.” (Study 3)²⁶

Participation and empowerment in care

It means performing activities that enable patients to be actively involved in the treatment process and the empowerment process is done for them and ultimately they become independent to do affairs. These activities include timely medication use, observing the hygiene, full-observance of diet, exercise, and weight control.^{18,26}

“Being well cared is to recover better and pass well in the hemodialysis, it is having control with the eating, personal hygiene and from the arm and medication. It is eating properly according to the diet, taking medicines on time, follow the schedule and aware with the weight.” (Study 3)²⁶

Outcomes of perceived quality of nursing care

From the patients' point of view, high quality nursing care leads to high dialysis adequacy, reduced burnout, increased satisfaction from the services, and ultimately improved quality of their life^{18,22,24}

“Almost all dialysis patients lack good spirits. They've gotten physically and mentally weak, have become fed-up and lost hope in life. Some of them just die in a matter of hours.” (Study 5)¹⁸

“I was afflicted with hepatitis here. I got it because the nurses don't follow hygienic procedures. They connect a patient to the machine while still using gloves stained by the blood of other patients. Where else could I have got hepatitis? I don't go to barbers or swimming pools. I am a victim of the nurses' negligence and have paid huge bills to be treated for this so far.” (Study 6)²²

“The treatment I'm getting is pretty good so far”, “its top-notch medical care”, and “I received very good to excellent care.” (Study 1)²⁴

Finally, the concept of patient perceived quality of nursing care from the perspective of patients was defined as “satisfaction from nursing care services and improvement of upgrading quality of life in an

appropriate structure, including: Sufficient Human resource, qualitative and adequate equipment, financial support system, favorable physical conditions with using standard processes include: continuous monitoring of the syndrome, process of effective education to the patient, efficient care (general characteristics of the ward, such as the atmosphere between staff and attention to patient concerns), effective therapeutic relationships, participation and empowerment of the patient in the care process.

Discussion

This meta-center study was conducted with the purpose of clarifying the concept of perceived nursing care quality from the perspective of patients in hemodialysis ward. According to the best researchers' information, this is the first meta-analysis study of qualitative studies on the perceived nursing care quality in patients undergoing hemodialysis. The results of this study showed that the perceived nursing care quality from the perspective of patients consists of three main items of structure, process and outcome.

Appropriate structure of perceived nursing care quality from the perspective of patients: Sufficient Human resource, quality of equipment used, financial support of patients, and quality of patient care environment. In line with the results of the present study on Sufficient Human resource, accomplished studies have shown that sufficient human power number in different fields, especially nurses, plays an important role in providing high quality cares, especially that there is a greater shortage in terms of nurses number in the world.²⁷ Nurses have the highest displacement among the health powers due to more shortage and inappropriate work environment.²⁸ According to patients' opinion, quality of equipment is one of the key bases of the perceived nursing care quality from the perspective of patients. In line with the results of the present study, accomplished studies show that related professionals also believe that existing sufficient facilities have always direct relation to the provided care quality, especially in hemodialysis patients that much of the presented cares is provided through specialized devices.²⁹ In line with the present study, which necessary to financial support has been raised as one of the major challenges among patients undergoing hemodialysis, qualitative study of Abma *et al.* have also shown that financial incentives cause to improve patient care.³⁰ Hemodialysis, on the one hand, imposes high costs on the patient and the health sys-

tem, and on the other hand, is accompanied with low outcomes of care quality indicators.³¹ The results of the Mushi *et al.* have shown that the global annual cost rate imposed for every hemodialysis patient in less developed countries is between Int \$3,424 and Int \$42,785.³² The proper environment is one of the important risk factors of nursing care quality. Studies have shown that the physical and psychological dimensions of the environment can help better improvement and adaptation of patients with the disease. The study by Prezerakos *et al.* has shown that work pressure, low resources, communication crises are the most important factors of high quality work environment.³³ Dimensions of the process of perceived nursing care quality from perspective of the patients include continuous monitoring of the syndrome, effective patient education, efficient care, effective therapeutic relationship, and participation, empowering the patient in the care process. Continuous monitoring of the syndrome is an important component of daily cares of patients undergoing dialysis. In line with the present study, the Kidney Disease Improving Global Outcomes (KDIGO) guideline also emphasizes that the variety of dialysis different syndromes affects the quality of work and social life of patients.⁴⁴ Also, the study Cabrera *et al.* has shown that high burden of different syndromes causes poor outcomes in these patients.³⁴ Studies show that supporting from families and patients using a problem-solving approach can help better and faster treatment of symptoms.³⁴ Like other chronic diseases, effective therapeutic communication is one of the most important steps of establishing a correct treatment process. Some of the care challenges in the treatment of chronic diseases include patients undergoing hemodialysis, self-care behaviors such as fluid control, diet, correct medication use, participation in care, and acceptance of the patient's role. Reducing and managing these challenges requires correct education to the patient.³⁵ Education to the patient is raised one of the fundamental principles of nursing care quality insofar as education to patient causes to reduce the complications and mortality of these patients.³⁶

From the patients' point of view, high quality nursing care leads to high quality dialysis, reduced burnout, increased service satisfaction, and ultimately improved quality of their life. The accompanied studies are in line with the present study and shows a direct relationship of nursing care quality with high quality dialysis,^{37,38} increased satisfaction and quality of life in patients undergoing hemodialysis.³⁹

The main strengths of this study were:

according to the researchers' knowledge, this is the first study to evaluate the concept of perceived nursing care quality from the perspective of patients, standard approach has been used to perform different steps.

The most important limitations of the present study were: similar to other meta-synthesis, the quality of their studies and interpretations is largely dependent on researchers. Only studies done in English and Farsi were searched. Included studies have been conducted only in a limited number of countries with specific cultures, so the generalization of study results are confronted with limitation and less can be generalizable to other communities.

Conclusions

The findings showed the importance of different aspects of the perceived nursing care quality from the perspective of the patients undergoing hemodialysis. The results of this study can help to a deeper understanding of the concept of nursing care quality and hearing patients' voice. Considering patients' opinions on the structural dimensions (adequate human power, effective equipment, desirable environmental conditions) and correct processes of service delivery (continuous monitoring of syndrome, training to the patient and effective communication) perceived nursing care quality by health policy-makers, and staff of dialysis ward can improve care quality and causes to enhance the quality of life of patients undergoing hemodialysis.

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