

The Process of Transition to Hemodialysis: A Grounded Theory Research

Abstract

Background: Transition is a passage or movement from one state, condition, or place to another. Patients with chronic disorders such as end-stage renal disease experience transitions. This study aims to explore the process of transition to hemodialysis. **Materials and Methods:** This is a qualitative grounded theory of a doctoral dissertation. Twenty-four participants (19 patients on hemodialysis, 2 family members, 2 nurses, and a physician) were selected through purposive and theoretical sampling until data saturation. Data collection was conducted through semi-structured interviews, as well as field notes and memos. Data analysis was done concurrently with data collection in three levels of open, axial, and selective coding according to the Strauss and Corbin (1998) method. Core variable was appeared at the end of selecting coding stage. **Results:** Confronting unexpected situation of hemodialysis, challenge of accepting hemodialysis, comprehensive and pervasive changes, efforts made to self-management, and integration of hemodialysis with everyday life were considered to be the main themes of the process of transition to hemodialysis. **Conclusions:** The results would increase evidence-based knowledge regarding the process of transition to hemodialysis. Through identification of this process, effective factors such as determining strategies for management would lead to facilitate more specialized care of people undergoing hemodialysis, appropriate nursing interventions and more effective training programs to prepare patients and their families during the process of transition to hemodialysis. These results can be used for conducting and preparing other qualitative and quantitative studies.

Keywords: Grounded theory, hemodialysis, Iran, nursing

Introduction

When a patient has sustained enough kidney damage to require renal replacement therapy on a permanent basis, he/she has moved to end-stage renal disease (ESRD).^[1] Rate of ESRD is increasing worldwide. There is a high prevalence of ESRD in both developing and developed countries.^[2,3] In Iran, growth rate of this disease is approximately 12% annually, which is more than its mean in the world.^[4] At present, annually, 16–17000 patients with ESRD undergo hemodialysis in Iran.^[5] Hemodialysis is the most common method of dialysis. Maintenance hemodialysis guarantees survival, and controls patient's uremic symptoms. It is routinely applied in three sessions per week, lasting at least 3–4 hours.^[6] However, there are other timeframes for hemodialysis based on patient's clinical and metabolic status.^[6] There are limitations for these people concerning their lifestyle, regiment, and liquid intake.^[7] Patients undergoing

hemodialysis have a strict regime of dialysis, dietary and fluid restrictions, and medications. Moreover, there are numerous physical, psychological, and social problems associated with the treatment, which make it difficult to accept.^[8] The onset of illness may render the individual, being a believer or nonbeliever, to realize the lack of control over his/her life.^[9] Starting hemodialysis is a critical transition that is associated with many changes.^[10]

The interest in transitions dates back to 1960s. Bridges mentioned three stages for transition, namely, ending phase (disengagement, misidentification, and disenchantment), neutral phase (disorientation, disintegration, and discovery), and new beginning phase (finding meaning and future, control, and challenge experience).^[11,12] Definitions of transition differ according to different disciplinary emphasis.^[13] According to Chick and Meleis transition is a transfer from one phase of life, condition, or

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situation to another phase.^[14] A transition approach to disruptive life events such as chronic illness brings emphasis on what is changing, how we experience the changes, and how we can respond to learn. It is not just an emphasis on the illness or the disease. Times of transition can be very difficult periods in people's lives. Transition is experienced when one chapter of life is over and another is beginning.^[15]

Although the complexity of transition, physiological, mental, and social features in people undergoing hemodialysis, as well as axial role of nurses in caring and supporting them has been mentioned, a perfect and appropriate description of the transition process to hemodialysis has not been presented. Quantitative researches have been conducted to assess problems of patients undergoing hemodialysis from various aspects. Despite explanation of patient's experiences of hemodialysis, qualitative researches have not answered questions regarding the meaning and process of transition to hemodialysis, its facilitators and its inhibitors factors, and the role of nurses in this regard. Studies associated with patient adaptation to hemodialysis that have been done through qualitative research method, and especially grounded theory (GT) approach inside and outside of Iran, have almost provided the general and superficial vision of transition to hemodialysis as a primary phase of adaptation. The present study has focused particularly on transition to hemodialysis.

Up to now, no qualitative research using GT has been taken regarding the process of transition to hemodialysis or even transition in other chronic diseases in Iran. Therefore, GT is considered as an appropriate method for complex and less known concepts; in addition, middle range theories and their development have been emphasized in nursing; therefore, it is necessary to conduct this research in the cultural context of our country. Through clinical and research experiences regarding patients on hemodialysis, the researchers were interested to perceive patients' problems deeper. This study aimed to explore the process of transition to hemodialysis. Hoping that it might be a step toward extending the body of knowledge in nursing and ultimately filling the gap between theory and practice in nursing.

Materials and Methods

This qualitative, grounded theory research was conducted from July 2012 to August 2013. The article aims to explain the process of transition to hemodialysis.

Participants were hemodialysis patients or individuals with direct and close relation with the patients who were referred to the affiliated hospitals of Shahid Beheshti University of Medical Sciences in Iran in 2012. Inclusion criteria were: Volunteered or willing to participate in the research. Patients with ESRD or persons with direct or close relation

with them. Within a week to a year of starting hemodialysis therapy. Able to speak Persian language. Inclined to explain their experiences.

Speech or hearing disorders or disinclination to participate were exclusion criteria. First, the participants were selected through purposive sampling. Then, other participants were selected by theoretical sampling based on the research findings until data saturation. Data saturation was achieved with 24 participants (19 patients on hemodialysis, 2 family members, 2 nurses, and 1 physician). Five nonpatients were selected based on the derived concepts and codes from analyzing prior interviews and theoretical sampling.

Data rigor was confirmed by Guba and Lincoln (1998) criteria: Credibility, conformability, transferability, and dependability.^[16] Data credibility were controlled by participants to determine their certainty regarding the derived concepts, prolonged engagement with research environment, planning a sufficient time for data collection, and abreaction. We asked participants whether they tend to review the manuscript of their interview, derived codes, and categories or not? If there was a positive response, the manuscript was returned to them. Data confirmability was done by constant data recording by receiving help from nursing professors (6 persons) to endorse derived primary codes, categories, and subcategories. Transferability was conducted with the highest variation through sampling which is being reported. At the end of the research, the results were given to 3 patients on hemodialysis (with participants' characteristics), and were comprised with their experiences. Participants' speeches as observers were used to reach dependability. Research process was recorded and data audibility was made possible.

Data collection was done through in-depth semi-structured interviews based on a guiding questionnaire as well as personal characteristics forms, field notes, and memos. Patients on hemodialysis records were used for confirming demographic characteristics. The guiding questionnaire was prepared and tried by interviewing two participants (two patients on hemodialysis.) In this primary study, in-depth semi-structured interviews were used which had applied open questions in three domains of meaning, effective factors, and process of transition to hemodialysis. Corrected questions in the abovementioned domains were prepared based on the findings of the primary study and were being used in the main research. These guiding questions include: What does using hemodialysis mean to you? What differences (physical, mental, social, etc.) have you undertaken compared to the past? Which factors (feelings, thoughts, attitudes, expectations, etc.) were affecting your experience of being treated with hemodialysis? Would you like to explain how you became hemodialysis? At present, what do you think about your

condition? Is there any time when you do not think about hemodialysis at all?

The following probing questions were used for clarifying issues: Would you please explain clearly your meaning about “...” that you said? Would you exemplify what do you do about “...”? Why do you do “...”? Who was effective on doing “...”? What is the use of doing “...”?

Because of participants' tendency, interviews were conducted during hemodialysis in dialysis units. The mean time of each interview was approximately 30–90 minutes (mean 57 minutes). Interviews were recorded and transcribed verbatim immediately after each interview and interned in Maxqda2 software for managing the data. Personal characteristics form included information about age, sex, marriage, education, occupation, hemodialysis records, and number of dialyses during a week. Observation method that was used during interview was the method using a nonstructured observer as a participant. Observations of participants' were taken without a predetermined text to observe actions, interactions, verbal and nonverbal behaviors. Manuscripts of observations and researcher's abstract thoughts were interned in Maxqda2 as field notes. Abstract thoughts of the researcher were recorded as a holistic analysis after each interview, abstracts of text memos, and memos, which were associated with theoretical sensitivity.

Data was analyzed using Strauss and Corbin (1998) method in the open, axial, and selective coding level.^[17] Each transcript was read three times to enable the researcher to become familiar with the data (immersion). The transcripts were then re-examined, and then the researcher read them line-by-line to identify primary codes. The coding, in this research, was used for identifying and conceptualizing events, actions, and meanings. The purpose of open coding was discovering, labeling, and identifying concepts as well as developing categories considering their properties and dimensions. The purpose of axial coding was clarifying the relationship between how emerged subcategories and primary categories and then comparing how those primary categories integrated with each other. The purpose of selective coding was merging categories at the dimensional level for processing the theory, confirming quotations related to merging and completing categories that require more development. We returned to old sites, documents, and persons as selective sampling, if necessary (for explaining storyline, relating main categories to core category by the paradigm, relating categories to each other in dimensional level, and confirming relationship by data).

Ethical considerations

Approval to conduct the research was granted by the Ethics Committees of Shahid Beheshti University of Medical Sciences, Iran. This research was approved by

the 121st ethical committee for medical research of the university dated July 8, 2012. Potential participants were informed that participation in the research was voluntary and they could withdraw at any time, their confidentiality would be maintained, and no individual would be identified in any publications arising from the research.

Results

There were 24 participants (19 patients on hemodialysis, family members, 2 nurses, and 1 physician) including 13 females and 11 males aged 18–75 years (mean 52.3 years) who were undergoing hemodialysis three times a week for 4 hours in each session (only in one participant, it lasted 3 hours). Participants had diverse marital status (married, death of spouse, and single), education (from illiterate to doctoral degree, and occupation (homemaker, unemployed, employee, self-management, and retiree). Their hemodialysis record ranged 1–12 months (mean, 7.5 months) [Table 1].

Core category was related to other categories based on paradigm. Findings showed that the process of transition to hemodialysis is an interactional and dynamic process that appears through a sequence as circular (in various directions) in patients based on their physical, mental, and social situation. In fact, “comprehensive and pervasive changes (physical, mental and social)” in patient and his/her attendants' life were identified as psychosocial core category in the process of transition to hemodialysis in the present research. Entrance to these processes taken by “Confronting unexpected situation of hemodialysis” could emerge suddenly or gradually. This confronting follows by “Challenge of Accepting Hemodialysis” subjectively or objectively. Patient's strategy in coping with this challenge is “Efforts made to self-management.” These efforts resulted in the “Integration of hemodialysis with everyday life.” Interfering conditions in the process of transition to hemodialysis include “Personal, social, spiritual and economic factors.”

The process of transition to hemodialysis

Five main themes appeared in the process of transition to hemodialysis. The number of codes was 3454 without counting overlapping and 846 counting overlapping. Five stages were considered to be the main themes in this process [Figure 1].

Stage 1: Confronting unexpected situation of hemodialysis

Type of confronting with hemodialysis, inability to control kidney disease, outbreaking signs and symptoms of the disease, feeling unwell, and the need for medical and nursing interventions were categories of this subtheme.

“My kidney dysfunction started about 8 months ago. I tried medical intervention which didn't work. At last dialysis was suggested.” (57-year-old male)

Table 1: Participants characteristic

Case no	Participant	Sex	Age (year)	Married	Education	Occupation	Duration of Hemodialysis (month)
1	Patient	Male	43	Yes	Diploma	Self-employment	1
2	Patient	Female	47	Yes	Diploma	Housewife	3
3	Patient	Female	31	Single	Junior college	Employee	1.5
4	Patient	Female	69	Yes	High school	Housewife	2
5	Patient	Male	18	Single	High school	Unemployed	3
6	Patient	Female	58	Yes	Illiterate	Housewife	6
7	Patient	Male	63	Death of spouse	High school	Unemployed	6
8	Patient	Female	60	yes	High school	Retiree	6
9	Patient	Female	62	Death of spouse	Illiterate	Housewife	5
10	Patient	Male	75	Yes	High school	Retiree	6
11	Family member (Son)	Male	39	Yes	High school	Self-employment	-
12	Patient	Male	48	Yes	High school	Unemployed	6
13	Patient	Male	60	Yes	High school	Retiree	6
14	Patient	Female	50	yes	High school	Housewife	9
15	Physician	Female	49	Yes	Doctoral	Employee	-
16	Nurse	Female	52	Yes	Bachelor	Employee	-
17	Patient	Male	50	Yes	High school	Retiree	7
18	Patient	Female	67	Death of spouse	High school	Housewife	10
19	Nurse	Female	36	Yes	Master	Employee	-
20	Patient	Male	57	Yes	Bachelor	Retiree	6.5
21	Patient	Female	50	Yes	High school	Housewife	8
22	Patient	Male	60	Yes	High school	Unemployed	8
23	Patient	Male	50	Yes	Bachelor	Retiree	7
24	Family member (Spouse)	Female	59	Yes	Diploma	Housewife	-

Stage 2: Challenge of accepting hemodialysis

The categories of this subtheme include acceptance or rejection of the requisiteness of hemodialysis. The first category included the subcategories of forced, experience-based or reason-based, and social norms-based acceptance of the requisiteness of hemodialysis. The second category includes rejection of the requisiteness of hemodialysis subjectively or practically.

“As I said, when I saw these people, who were like me, maybe even weaker than me people with worse conditions than mine, I realized that they were getting better in this way. I started to think that I have to adapt to the situation at hand just like what they did.” (50-year-old male)

“He wouldn’t accept it. S/he insisted that there was nothing wrong with her/his kidneys, and that s/he didn’t have any problems. S/he wouldn’t believe that s/he had such a disease. S/he just didn’t want to accept it.” (39-year-old male)

“They had been trying to put me on dialysis for a year, but I wouldn’t let them to do so. I escaped right from the dialysis machine. I did escape!” (62-year-old female)

Stage 3: Comprehensive and pervasive changes

These changes include physical, mental, and social changes.

3-1. Physical changes

Physical changes include favorable and unfavorable physical changes. Favorable physical changes include improved test results, better physical condition after hemodialysis, and healing site of fistula and catheter without complications. Unfavorable physical changes include unimproved physical condition despite undertaking hemodialysis, multiple health complications caused by hemodialysis, medication side effects, complications caused by dialysis machine and vascular access equipment, and physical limitations due to hemodialysis.

“I have been able to come home after being dialyzed. I certainly look better and I can walk and breathe far easily. I had been suffering from insomnia for 2 months, but now I can sleep much better. Physically I feel more comfortable.” (43-year-old male)

“What I’m trying to say is that dialysis has done nothing good to me. It has been two months that I’m being dialyzed and it has not been good for me. My appetite has decreased, and I feel nauseous and restless. When I get home after dialysis, tonight for instance, I keep groaning till 5 a.m. because of all the headaches, backaches, and neck pains. What is possibly good about this?” (69-year-old female)

3-2. Mental changes

In this category, cognitive development regarding hemodialysis, dual concepts in relation to hemodialysis,

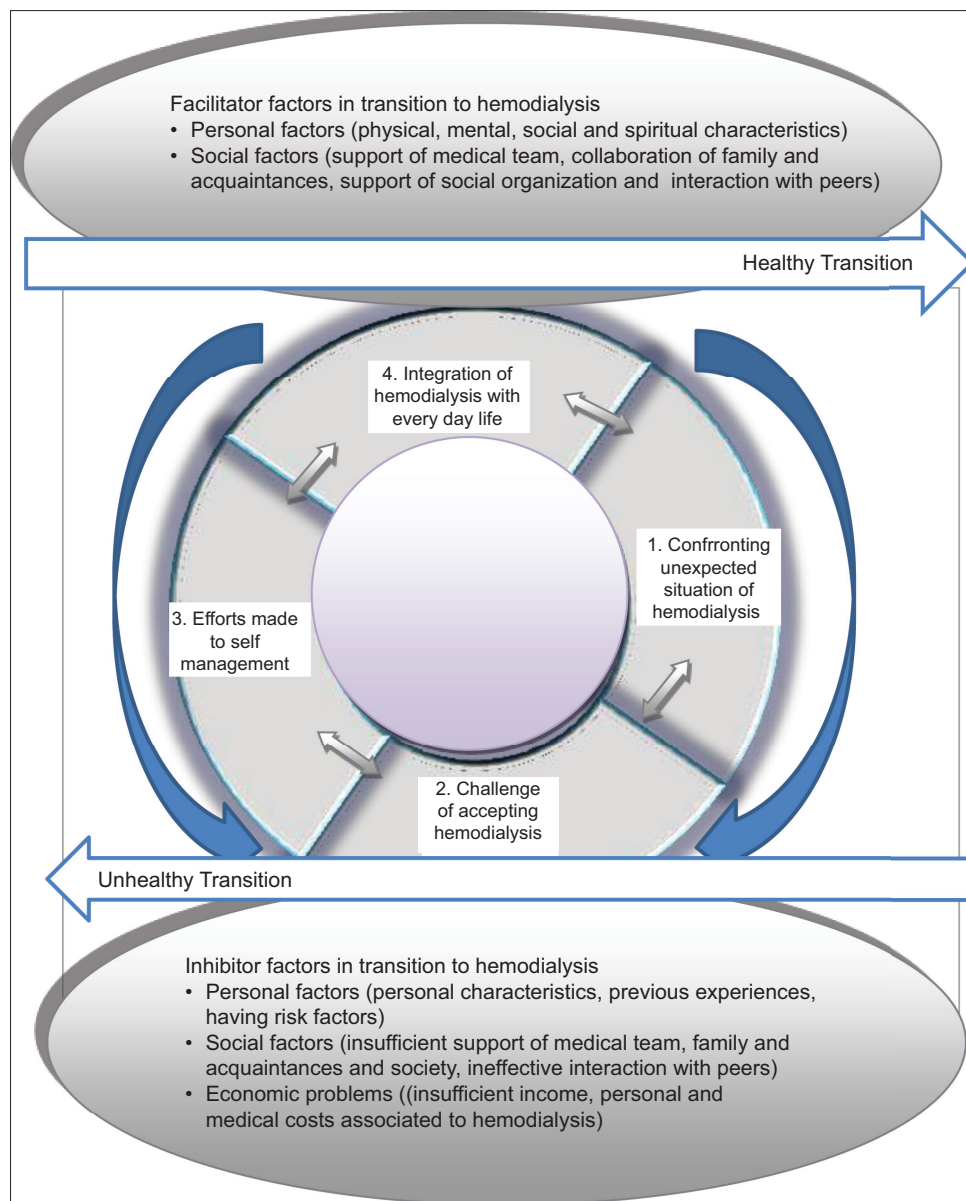


Figure 1: Conceptual map of transition to hemodialysis based on participants' experiences

emotional changes associated with hemodialysis, and modification or lack of modification of expectations regarding hemodialysis were placed.

“All I know is that I need it (dialysis). I really do. So I have to come to terms with it.” (31-year-old female)

“This is the dead end for me. I assume that going on dialysis is the end. I have no hopes. Maybe others consider dialysis to be helpful. But I’m totally disappointed.” (58-year-old female)

3-3. Social changes

Participants mentioned changes in job status, social status, social interactions, and individual abilities, as well as problems associated with referring to diagnostic and

treatment centers, traveling restrictions, and pressures and restrictions on patient’s family.

“I can’t travel anywhere. My cousin’s wedding is coming this week but I cannot go. I have to be dialyzed every other day.” (47-year-old female)

Stage 4: Efforts made to self-management

Participants mentioned strategies such as improving self-morale, seeking treatment, seeking help from others, and following medical and nursing orders.

“I decided to fight and extirpate my problem. I decided that I should be the one pressing the disease not the other way around. You know what I mean? I am dealing with it. I do not have any other choice.” (50-year-old female)

Stage 5: Integration of hemodialysis with everyday life

It included resumption of normal life activities and adaptation with hemodialysis.

5-1. resumption of normal life activities

It included resumption of career activities, social activities, everyday life activities, religious tasks, and not considering dialysis as a hinder for future plans.

5-2. Adaptation with hemodialysis

It included acceptance of hemodialysis and living with hemodialysis.

Participants mentioned hemodialysis acceptance with time and insight improvement. Normalizing hemodialysis, living in dialysis ward, maintaining prior self-image, enduring hemodialysis and coping with it, complying life activities with hemodialysis, and considering the dialysis machine as part of the body, they all referred to adaptation with hemodialysis.

"Dialysis has no effect on my job. As I said, I had been invited to a job despite being retired. I could manage my classes successfully. I didn't have any problems regarding this issue." (57-year-old male)

Effective factors in transition to hemodialysis

Facilitating factors in transition to hemodialysis were included personal factors (physical, mental, social and spiritual characteristics), social factors (support of medical team, collaboration of family and acquaintances, support of social organization and interaction with peers). Inhibiting factors in transition to hemodialysis were personal factors (personal characteristics, previous experiences, having risk factors), social factors (insufficient support of medical team, family, acquaintances and society, ineffective interaction with peers), and economic problems (insufficient income, personal, and medical costs associated with hemodialysis).

"I think if patient has high spirits, he/she will accept it easier. So he/she does not have a solution. Accompanies and families affect this situation a lot. They must help the patient and improve his/her spirits in order to accept the problem. Otherwise, it is very difficult. It is very difficult for the patient. If you do not improve his/her spirits, there would be nothing else." (39-year-old male)

"My answer is that: Each body has its own circumstances. In addition reacts to the ongoing treatment in a special way. One may show allergy. Other may adjust so well without any sensitivity and just being released. Another may become worse than before. So bodies' circumstances are really different." (59-year-old female)

"It refers to the self. The person is very important. It means that if he considers his dialysis as a disaster, he will lose confidence at all. Either if he doesn't adopt

with it, he will exterminate himself. The person is very important." (53-year-old male)

"If the nurse does his work well, the complications of hemodialysis will be lesser. This helps the patient to intense hemodialysis and to endure it better. If patient endure it better, this will lead to improve his morale. That is very important." (49-year-old female)

"100 to 120 individuals are coming and dialyzing every day. I went, I saw, I spoke. Well, as it is being said commonly, various kinds of people exist. I saw a young 20-year-old. I saw peoples under 20-year-old. When I saw them, I become hopeful of myself. I told myself that they are younger than me or they are lighter than me by weight, bodily, physically and energy so much." (50-year-old male)

Discussion

The grounded theory resulted from this research is comparable with Bridges's theory of transition^[1] and Meleis's theory of nursing transitions.^[2] This theory particularly explains the process of transition to hemodialysis, whereas abovementioned theories explain transition in general. In comparison with Bridges's theory that explains general phases of transition (ending, neutral, and new beginning), "Confronting unexpected situation of hemodialysis" agrees with the ending phase, "challenge of Accepting Hemodialysis" agrees with the neutral phase, and "efforts made to self-management" as well as "integration of hemodialysis with everyday life" agrees with the new beginning phase. In comparison with Meleis's theory, it must be mentioned that type of transition to hemodialysis is a health-illness transition; its pattern is circular with properties of transitions. Personal and social interaction effects on the process of transition to hemodialysis are very obvious. "Comprehensive and pervasive changes (physical, mental, and social)" were identified as the psychosocial core category in the process of transition to hemodialysis. These changes are the content of the theory of transition to hemodialysis that is evident in all phases of transition, and is congruent with definitions of transition that have been reported in the literature.^[18,3]

In this study, the process of transition to hemodialysis was identified during some phases through the grounded theory. However, this process was not observed in the study of "Patients' experience of transition onto hemodialysis: A qualitative study"^[19] because of the nature of the study (interpretive content analysis); nevertheless, its themes (preparation, cognitive style, social support) are congruent with the themes of the present study. "Choice" subcategory (related to preparation) associates with the challenge of accepting hemodialysis in the present study that finally led to accepting or not accepting hemodialysis by the patients. In fact, "cognitive style" relates to the changes in the cognitive scope that are a part of the comprehensive and pervasive changes which occur in

the patients who undergone hemodialysis. Social supports related to effective factors in transition to hemodialysis.

“Trajectory” is another term for describing transition.^[2] In the study titled “Toward a trajectory of adjustment in women with end-stage renal disease on hemodialysis,”^[20] in which the transition to hemodialysis was assessed; three phases were observed, i.e., initiation – the initial phase of adjustment; appreciation – the middle phase of appreciating hemodialysis treatment; and grappling – the later phase of dealing with adverse effects from hemodialysis. Initiation phase agrees with “Confronting unexpected situation of hemodialysis,” appreciation phase agrees with “challenge of accepting hemodialysis,” grappling phase agrees with the “efforts made to self-management” in the present research. In fact, if we consider adjustment with hemodialysis to be a process, adjustment trajectory or transition to hemodialysis will be the first part; and if we consider adjustment as an outcome, transition is a phase that occurs before. Nevertheless, the authors have focused on the concept of adjustment. The study of “designing adjustment model in hemodialysis patients”^[9] has focused on the concept of adjustment too, however, the theme of “perceived threat of the disease, its complications and hemodialysis” agrees with confronting the unexpected situation of hemodialysis, “disease and hemodialysis acceptance” agrees with the challenge of accepting hemodialysis, “self-confidence and life management” agrees with efforts made for self-management, and “return to an active normal life” agrees with the integration of hemodialysis with everyday life in this study. It appeared that transition to hemodialysis is an adjustment with hemodialysis that is not complete. In fact, it demands time for completion. In other words, transition is the primary phase in the adjustment process with hemodialysis.

This is a small-scale research, which was carried out in the national context of Iran. Therefore, caution should be considered in generalizing the findings to other countries. Other limitations of this research were critical conditions of some patients for participating in the research as well as being busy with work and lack of time in some nursing experts’ cases for reviewing derived codes and categories.

Conclusion

Existing theories have defined the transition as passing from one stage of life, condition, or situation to another. This study addresses the quality of the details of this passage. Results of this research increase evidence-based knowledge regarding the process of transition to hemodialysis. Identifying this process, effective factors, as well as determining strategies for managing it, lead to facilitating a more specialized caring of people who undergo hemodialysis, appropriate nursing interventions, and more effective training programs for preparing them and their families during the process of transition to hemodialysis. Knowledge about the transition to hemodialysis helps

informed and potentially empowered nurses to recognize the needs of patients on hemodialysis and care of them in this process. Furthermore, increasing knowledge of nursing managers leads to more support of caring and educational programs which are effective in the process of transition to hemodialysis as well as more careful supervision of client–center nursing interventions. These results can be used for conducting and preparing other qualitative and quantitative studies.

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Conflicts of interest

There are no conflicts of interest.

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