

Factors Associated with the Choice of Peritoneal Dialysis in Iran: Qualitative Study

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Abstract

Citation: Ahmadi SM, Jalali A, Jalali R. Factors Associated with the Choice of Peritoneal Dialysis in Iran: Qualitative Study. Open Access Maced J Med Sci. <https://doi.org/10.3889/oamjms.2018.255>

Keywords: Peritoneal Dialysis; Decision-making; Content Analysis; Qualitative Research

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Received: 08-Mar-2018; **Revised:** 24-May-2018; **Accepted:** 26-May-2018; **Online first:** 19-Jul-2018

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Funding: This research has been supported by a grant from the Deputy for Research and Technology, Kermanshah University of Medical Sciences (grant no 94150)

Competing Interests: The authors have declared that no competing interests exist

BACKGROUND: Decision making about the type of dialysis in kidney failure is a matter of great importance involving the patients, his/her family, and the health care team. Identifying the factors influencing decision making for undergoing peritoneal dialysis helps the development of this therapeutic method in patients.

AIM: The present study aims at explaining the factors influencing decision making about undergoing PD in ESRD patients

METHOD: The present study is a qualitative research, which utilizes content analysis method. A semi-structured and in-depth interview was conducted with the 19 participants that selected by purposefully sampling. All interviews were recorded subsequent to receiving consent of the participants and were analyzed using content analysis method.

RESULTS: The first codification process resulted in 345 codes, which finally decreased to 278 codes by continuous reading and removal of duplicates. Overall, two main categories and eight categories namely facilitating factors (viz. family atmosphere, hemodialysis problems, PD advantages, and social environment) and inhibitory factors (viz. inefficient family, PD requirements, attitudes towards hemodialysis, and the country treatment system) were selected from the total 19 sub-categories and 278 codes.

CONCLUSIONS: Results indicated that various personal, family-related, psychological, social, and economic factors could affect the decision on the type of dialysis in patients. Therefore, basic infrastructures such as social support, education, and even the specialist and positive perspective of the Ministry of Health are required to choose this therapeutic method.

Introduction

End-stage Renal Diseases (ESRDs) are rapidly developing throughout the world [1]. Nowadays, appropriate alternative therapeutic methods for patients with ESRD or Chronic Kidney Disease (CKD) are reliant upon three main treatments namely Hemodialysis, Peritoneal Dialysis (PD), and Kidney Transplantation [2] [3]. In Iran, by the end of 2012, 32686 patients were identified with renal disease; of this number, 15957 patients were treated with hemodialysis, 15592 patients with

transplantation, and 1137 patients were treated with the PD method [4].

Alternative treatments for these patients have to be predicted in advance and the willingness of the patients has to be preferentially intervened in choosing the therapeutic method. The selection of type of treatment may depend on the physician's judgment and diagnosis, access to medical care centers, the clinical state of the patient, pre-dialysis training, age, gender, personal beliefs and values, past experiences, and family support [1] [2]. Pre-dialysis training may help patients in better decision making on the type of dialysis. The aforementioned

training is of particularly crucial importance for CKD patients for whom dialysis treatment is essential to helping them face minimum disruption in their lifestyle or family situation [5]. Patients' intervention in decision making related to their health has been rarely common throughout history; traditionally, medical-related decisions have been frequently made by physicians. Such a style of Medical Decision Making (MDM) is frequently the dominant style [6].

Recognition of the perspectives of patients, caregivers, and significant agents affecting decision making is required for helping patients in making the best choice [6] [7]. The aforementioned trend may be highly helpful as well as effective in finding out the reasons behind the selection of PD by patients [5]. Therefore, the best method for understanding the reasons behind selecting PD by these patients is their own explanations, which could prove extremely helpful [7] [8] [9].

Regarding the investigations carried out in terms of the decision making process and related influencing factors, qualitative research was found to be the best study method [10]. In qualitative research, the words and explanations statements of participants are analyzed by the researcher, and their experiences in terms of the study under-scrutiny are reported as explained personally by the patients [11]. Qualitative research is done in a variety of ways; qualitative research using the content analysis method is one of these ways [12]. In content analysis, the researcher may reduce data, endow it with favorable structure and order, and subsequently facilitate theory development. Content analysis is a research methodology investigating the words and phrases in a given text [11].

The researcher determines the duplications, and the meaning and relevancies of the words and concepts of the text, and then concludes the messages embedded in the text, the messages of the author and audiences, and even the culture and the era to which the words and concepts are dedicated [11] [12]. According to statistics of Kermanshah province and its neighboring cities, patients have a strong desire toward hemodialysis. On PD, according to existing statistics of the educational center of Imam Reza (AS) in this province (the only PD center in the west of Iran), by January 2014, the number of PD patients under supervision in this center were reported as approximately 32. In the present study, by using the aforementioned method, the experiences of participants were dealt with to present strategies for policy makers to encourage patients to undergo PD; additionally, the facilitating factors and existing barriers to choosing PD for continued treatment were also determined. The present study aims at explaining the factors influencing decision making about undergoing PD in ESRD patients.

Methods

This study was approved by the Ethics Committee of Kermanshah University of Medical Sciences (KUMS.REC.1394.476). In the present study, according to the research objective, all the patients under treatment with PD or patients with kidney transplantation who had experienced PD as a treatment method before kidney transplantation - at the time the of the study - were selected as the study participants. Moreover, a sampling with maximum variation was done to obtain richer information. Additionally, the patients' acquaintances, their family and some nurses and specialist physicians who could participate in decision making as the therapists of the patients were also included as participants of the study. Using purposeful sampling patients with appropriate mental and physical conditions without the experience of mental disease were chosen as the participants. A deep and semi-structured profound interview including open-ended questions was used as the main method of data collection. The main interviews with participants were carried out separately and face-to-face at different times - whether on the morning or afternoon- in the PD ward of Imam Reza Hospital, Kermanshah at the appropriate time and place based on the participants' preferences.

Upon participant consent, their interviews were recorded. During interviews, some notes were taken, so that tone of the voice, word pronunciations, laughing, crying, and pauses of the contributors were also recorded. For the sake of facilitation in data gathering, guiding questions were also used. Before each new interview, the previous handwritten and codified interview including some notes as well as guiding questions were also reviewed by the researcher to help him/her to more profoundly and perfectly investigate the issues in the following interviews. Meanwhile, the contributor's address and telephone numbers were received by their own permission for verify their statements or for invitations for participating in later interviews, if needed. An interview guide was used for leading the interview in the proper direction and extracting the facts, mindsets, processes, and perspectives of contributors. At the very beginning of the interview, questions in terms of the onset of kidney failure and its symptoms were asked to pave the way for proceeding with the main questions and establishing proper connection with the contributors. Then they were asked to explain about whatever happened to them after the time from final diagnosis confirmation of the disease to the treatment onset.

Some questions used during the interview include:

1. What led you to choose PD as your therapeutic method of choice?

2. Who and what affected your decision?
3. What are the advantages and disadvantages of this method?
4. Why did you choose hemodialysis?

According to the responses delivered by participants, more questions were posed to clarify the details of their responses. When the participants started to speak freely, the researcher led them by asking deeper and more persistent questions at the right time to better clarify the phenomenon under scrutiny. The interview frequently ended with: "Is there anything else you want to talk about? Any questions?"

The interview time varied depending on the participants' power to respond. The average time of interviews in each session varied from 40-60 minutes. Meanwhile, as the researcher (the first author) was familiar with the native language of the studied region, richer information was collected.

After each interview ended, relevant content analysis was performed using the conventional method. To this end, after each interview, first, it was precisely listened to by the researcher; second, the interview was listened line by line; then the whole interview was transcribed in this way followed by codification. Following codification, the codes were classified according to the conceptual content, similarities and differences. Finally, the main categories were provided after reviewing the codes and their relevance.

Four criteria of authenticity (credibility, confirmability, dependability, and transferability) by Lincoln and Guba (1985) were used to ensure the accuracy and reliability of data [12]. To that end, the researcher had a long-term connection with the place of the study, which led to appropriate understanding of the study environment and winning the trust of participants. Member check was applied to confirm the accuracy of data and codes, that is to say, after coding the interview text, it was returned to the participants to verify the accuracy of codes and interpretations. Accordingly, the codes that failed to represent the perspectives of the participants were modified. Moreover, the sampling method covering a wide range of clients, their family and the medical team from the perspective of age, gender, and work experience in that ward helped to increase validity of data. To increase the level of verification of the findings, the researcher attempted to completely explain the whole process of research (e.g. data collection, analysis, and content formation) to enable others to evaluate the dissertation by reading it. To investigate the transferability of findings, attempt was made to thoroughly explain the field of the study to enable readers to comment on the transferability of findings.

The text of some interviews was also revised by the observers; that is to say, codes and extracted categories were investigated by several therapists and faculty members in addition to the researcher.

Results

In the present study, a total 22 interviews with 19 participants including 13 dialysis patient's that had demonstrated in table 1. (10 patients with PD and three patients with hemodialysis), three family members of patients (e.g. husband/wife, patient's daughter/son), and three therapists including three male specialists having experience in the treatment of kidney disease were interviewed. Moreover, two main categories, eight categories, 19 sub-categories, and 345 codes that reduced to 278 after duplicate removal and continuous reviewing were developed .

Table 1: Sociodemographic characters of participants

NO	Age (Y)	Sex	Marital S.	Interval of PD (Y/M)	Interval of Hemodialysis (Y/M)	Job	Graduate S.
P1	46	Male	Married	1 Y	-	Deriver	Diploma
P2	50	Female	Married	4 Y	9 Mon	House Wife	Elementary School
P3	26	Female	Single	6 Y	4 Mon	Student	Diploma
P4	25	Female	Single	3 Y	1 Mon	Unemployment	Bachelor
P5	40	Female	Married	3 Y	-	House Wife	Diploma
P6	61	Male	Married	2 Y	2 Mon	Retired	Bachelor
P7	59	Male	Married	1 Y	-	Retired	Elementary School
P8	50	Female	Married	1 Y	1 Mon	House Wife	High school
P9	39	Female	Single	10 M	1 Y	Retired	Master of Science
P10	27	Female	Single	5 M	-	Unemployment	Diploma
P11	56	Female	Married	-	3.5 Y	House Wife	Elementary School
P12	32	Female	Married	-	2 Y	House Wife	Diploma
P13	51	Male	Married	-	17 Y	Retired	Diploma

Grounded on the research data, patients cited two main factors namely inhibitory and facilitating in choosing their therapeutic method. The aforementioned factors were obtained under the title of general categories resulted from the codes, sub-categories, and categories.

Facilitating factors:

Four categories and 10 sub-categories were resulted from the total number of codes and interview analyses. These factors will be introduced by the order of categories.

Table 2: Categories and subcategories

Categories	Sub-categories
Facilitating factors	Family atmosphere
	Hemodialysis disadvantages
	Peritoneal dialysis advantages
Inhibitory factors	Social atmosphere
	Inefficient family
	Requirements of PD
	Attitudes towards hemodialysis
	The treatment system of the country

Family atmosphere

Data analysis in the present study indicated that patients are overshadowed by their family atmosphere for choosing their main treatment method following confirmation of diagnosis. Family atmosphere could enact a binary impact on the acceptance or refusal of PD as the therapeutic method by patients. In the present study, family

atmosphere comprises four sub-categories namely interactions, family structure, cultural level, and life expectancy. Qualitative analysis of data indicated that if the given family has appropriate interactions and internal structure stability, it could be considered as a helpful as well as effective factor for choosing PD as the therapeutic method. Accordingly, knowledge and culture of the family is also assumed to be a significant as well as effective factor, so that it could act as an inhibitory factor when it fails to be insufficiently high. In this respect, one of the patients stated that *"my mother helps me a lot. In 90% of cases she does my affairs, although I can handle my daily work, my mother does not let me do them, she says".... (P10).*

Another patient also suggested that *"my wife did all my dialysis affairs, I could do them, I have no problem, but she extremely helped me. Indeed, she was the person who recommended me to choose this therapeutic method".... (P1).*

Disadvantages of Hemodialysis

The disadvantages of Hemodialysis are considered to be an important category, which enact a highly significant role as facilitator in choosing PD. This category constitutes three sub-categories namely physical problems, psychological problems, and lifestyle disorder. Analyses of the quotes of patients are representative of numerous physical, mental, social and even financial problems of hemodialysis. Most patients and their families are reluctant to choose hemodialysis due to its physical and mental problems; rather, they tend to choose PD as their therapeutic method. In this respect, one of the patients pointed out that *"when I did hemodialysis, I felt extremely lethargic; it was very difficult for me to cope with it. When I returned home, my mood totally changed, I really hate to".... (P9).*

Advantages of Peritoneal Dialysis

PD advantages are another significant category included in the general categories of facilitating factors. Analysis of the statements of patients revealed that the present category could play a significant role in choosing the therapeutic method by the patients. This category constitutes two sub-categories, namely welfare and family accompaniment. Patients choosing PD is more compatible with the stress of the respective disease, for the patient could individually handle his/her disease easily and without being hospitalized; the patient may even feel healthy and satisfied with life, and notably, continue with their career. In fact, the patient feels responsible for caring for him/herself. One of the patients observed that *"I feel at ease with PD. I even go out, visit my relatives, go for shopping, and go to parties. Frankly speaking, I have no problem at all, that is".... (P13).*

Another patient said *"since I have done PD and have stayed at home with my wife and children, I have a good feeling; I never feel that I'm sick".... (P6).*

Social Atmosphere

Currently, there is a low level of recognition and awareness about PD, and hemodialysis is known as an alternative therapeutic method. The results obtained from content analysis indicated that the public has a compassionate look at hemodialysis patients. In fact, the majority of people consider these patients to be frail and weak individuals who excessively need the help of others for their daily life. Most patients well perceive such a feeling, which is why they conceal themselves from the eyes of others, particularly from relatives and acquaintances. The aforementioned issue may fail to be seen in PD patients, and this is one of the reasons it is selected by patients. This category includes two sub-categories namely the perception of the society and sense of ostracism. In this regard, one of the patients stated that *"when my relatives, acquaintances and neighbors found that I undergo hemodialysis, their behavior toward me changed completely. When they confronted me on the street, their look was full of pity"....(P5).*

Another patient said that *"my friends, relatives, and even the members of my family treated me in a way as if I was a hapless patient. They continuously said that throw 'him' away, we should merely give 'him' service; while 'he' can do nothing for us, irrespective of the costs of 'his' medications"....(P7).*

Inhibitory Factors

This main category constitutes four categories and nine sub-categories. These categories are presented as follows.

Inefficient Family

Inefficient family is one of the effective categories in decision making for treatment. Family conflicts and personal orientations may lead to numerous challenges for the selection of treatment that may lead to delay in patients' decision and lead them toward hemodialysis. This category includes three sub-categories namely inappropriate interactions of the family, limited financial ability, and limited knowledge and culture. One of the patients stated that *"my family had nothing to do with me, they always say that we can do nothing for 'you', as all physicians say 'you should undergo hemodialysis, so do it'. But I consulted with many; I stood against them and chose PD".... (P10).*

Requirements of PD

Analysis of the interview carried out with participants indicated that PD fails to be appropriate for all patients. The need for personal health care, self-care, and other factors related to care and treatment of PD are factors that may require more attention. However, the above-mentioned factors may lead patients to a sense of added responsibility. Correspondingly, in cases where there is a low level of self-confidence and weakness in patients, the sense of self-efficacy may become strengthened in them and subsequently lead the patients toward PD provided that they receive adequate education and family support; otherwise, the patients may tend to choose hemodialysis. This category includes two sub-categories namely self-care and mental challenges.

One of the patients stated that *"PD is a good method but you should highly care for yourself; you should check your bandage, and should highly observe hygiene to avoid infection. Generally, you should be your own nurse and it is better if your family helps you in this regard".... (P3).*

Attitudes toward Hemodialysis

In explaining this category, it must be mentioned that hemodialysis is a traditional method that is widely known and accepted by the majority of people. On the basis of the remarks outlined by patients and therapists, in hemodialysis, toxins and waste products are quickly excreted from the body. Moreover, due to the regular presence of hemodialysis patients in the hospital and their visits with other patients -unlike the condition for PD- they are in close contact with the problems of this group of patients. Furthermore, the unfavorable history of PD in the public mind, such as infections, may considerably affect the refusal of this method by patients. More to the point, according to the emergently clinical condition of some patients with ESRD at the time of arrival to the hospital and health-care centers, hemodialysis is the only possible therapeutic option for them. Additionally, a plethora of hemodialysis centers in cities and a limited number of PD centers (only in provincial centers) consider hemodialysis as the best solution for patients requiring dialysis.

This category includes two sub-categories namely accessibility and pervasiveness. One of the patients asserted that *"hemodialysis units are very large with numerous beds and patients. When I was hospitalized for the first time for dialysis in the upper units, with that excessive population, I never thought there may be another type of dialysis available, or, if any, where it is offered".... (P6).*

Treatment System of the Country

Analysis of the remarks mentioned by participants indicated that ESRD patients referred to

different units of healthcare centers fail to receive sufficient information about their disease on behalf of the therapeutic team; even medical students of different levels fail to provide considerable information to these patients. Unfortunately, nurses of non-specialized units fail to considerably help these patients. Most physicians and nurses are somewhat well familiar with hemodialysis. Moreover, the huge number of dialysis units in most hospitals is representative of the preference of the treatment system of the country for hemodialysis. This category comprises two sub-categories namely focus on hemodialysis and financial support to the therapeutic team in hemodialysis.

Discussion

The present study aimed at explaining the factors influencing decision making on choosing PD in ESRD patients in Kermanshah. Attempts were made to identify the factors influencing decision making of patients under PD as well as the factors enacting the role of barriers to their decision.

The findings indicated that the family atmosphere and its different areas appear to be significant factors in decision making on the type of therapeutic method in ESRD patients, particularly in Iran and even the western part of the country where patients receive high support from their families [13]. Different areas of family atmosphere could enact either a facilitating role or inhibitory role in the decision-making process on choosing PD as the therapeutic method. In the present research, different family-based areas including high family interactions, good structure, high knowledge level, up to date culture, and high life expectancy may play a facilitating role. On the contrary, inefficiency of the family, limited financial ability, and limited knowledge and culture may play an inhibitory role in this regard. In different studies, the role of the family in supporting and rehabilitating patients with kidney disease in the selection of their therapeutic method [10] [14] Hope (2013), in his study, investigated the profound impact of the decision-making process on the selection of an appropriate therapeutic method in chronic diseases and the impact of the family on this matter. He also believed that such decision making may provide the best quality of life for the patient [15].

Hemodialysis disadvantages, physical and psychological problems and lifestyle changes other significant factors affecting the decision making of patients. The aforementioned issue has a more considerable role in hemodialysis compared to PD. The analysis results of the remarks mentioned by participants who firstly undertook hemodialysis and subsequently shifted to PD are representative of the aforementioned claim. Hope (2013) also introduced

physical symptoms and the incompatibility of hemodialysis with school attendance or social activities as the prominent problems of this therapeutic method. In their study, Berger et al. (2016) pointed out the amount of life-threatening infections among hemodialysis patients due to application of permanent vascular catheters and manipulations applied on arteries and veins. They also emphasized on selecting PD at the onset of kidney alternative therapies [16]. The present studies showed that physical and psychological symptoms resulting from hemodialysis are assumed to be significant influencing factors in the decision making of patients .

Results indicated that the advantages of PD are another significant factor that could affect the decision making of patients and their families on the type of treatment. Sense of self-confidence induced on the patient, absence of limitations the patient would face in hemodialysis, the patient's ability in doing daily life activities, and granting permission to patients for carrying out social activities are assumed to be highly important and effective factors that emphasized on the high satisfaction of patients and their quality of life. The results presented by some studies also emphasized on the life quality of patients during the PD process [2] [17]. In their study, Rubinsky et al. (2015) also concluded that providing patients with good consultation about self-care in physical, mental and emotional areas could improve their quality of life [18]. Other studies also concluded that PD may lead to satisfaction of patients and their families due to the fact that PD is done daily and more significantly in the home environment [10] [19] [20]. Similarly, in the present study, the authors also found that the home-driven nature of PD and no need to be present at the hospital three times a week is two of the reasons encouraging patients to choose this therapeutic method.

Self-management is another considerable factor in PD selection. The fact of the matter is that, PD, per se, may lead to a sort of self-management in patients. The results showed that self-care ability in patients, education, the hope induced on them, and also the mental support received on behalf of their families, may lead patients to choosing PD and promoting their ability in performing self-care activities in this therapeutic method. Another study concluded that enabling patients in choosing PD and accompanying them during the treatment process are considered to be significantly effective factors [9]. Wang (2013) also emphasized the observation of hygiene and self-care in dialysis patients as an important factor in promoting quality of life [20]. He also concluded that appropriate education and guidance on behalf of nurses and regular planning in terms of self-care activities, and the promotion of patients' knowledge and skills in addition to self-management may promote the quality of life in patients [9] [16] [20].

Results indicated that PD is a caring method

in which the patient and his/her family are required to play active roles. Therefore, related requirements could face most patients with fear as well as a challenge. Due to lack of knowledge about the given disease and the expectations of the medical team of self-care activities, a number of patients may suffer anxiety and may face the dilemma whether to choose PD or hemodialysis. In a systematic review study, researchers found that a plethora of studies may focus on the prioritization of problems occurring during hemodialysis and dialysis, self-management ability and prioritizing its levels may be considerable factors in decision making about the type of dialysis by the patient [9]. Another study investigated and compared PD and hemodialysis problems faced also by Japanese patients and demonstrated that they too may experience similar challenges. Considering the Japanese culture where people are accustomed to eliminating problems and difficulties with the help of each other, the members of the family, wife/husband, and relatives supportively work in line with the patient and intervene with the decision of the of the patient regarding the type of treatment [8]. In the Iranian society, the family also plays an extensively considerable role and most patients choosing the PD method have the backing of their family members.

Results of the study indicated that the state of treatment system in our country, widespread hemodialysis units throughout the country and pervasiveness of hemodialysis among people are considered inhibitory factors for the selection of PD by patients. The results presented by Ghaffari et al. (2010) may also reveal the popularity of hemodialysis among people. Moreover, the results presented by studies are representative of the pervasiveness and popularity of this treatment among patients and even the medical team [21].

The existing problems in treatment tariffs for PD and also the treatment system approach of our country toward hemodialysis are considered to be influencing factors in the unwillingness of physicians toward this therapeutic method, finally leading to less encouragement of patients to choose this method.

In conclusion, results indicated that personal, family-related, psychological, social, and economic factors could highly affect the treatment state of patients and the type of dialysis chosen by them. Selection of the type of dialysis, particularly PD in this study was closely related to the family atmosphere, personal perceptions, and financial and social support for patients. Moreover, knowledge and awareness of patients and their families about PD and hemodialysis was considered to be a significant as well as influencing factor. Unfortunately, the enhancement of hemodialysis units and their development in the Medical Education Unit (MEU) has led to limited attention and education about PD, and has also led most people and particularly patients to inadequate knowledge of PD. Furthermore, the attitudes of physicians and their advices about the type of dialysis

were highly influencing. In the present study, it was revealed that most patients and their families follow the advices and decisions of their physicians for a variety of reasons. Therefore, appropriate planning in the country and development of the PD unit in treatment, education, and research units, it could be expected that public awareness promotes this therapeutic method so that more patients will choose the method based on their power and family status.

Acknowledgements

We are grateful to the participants for active cooperation and the Deputy for Research and Technology, Kermanshah University of Medical Sciences, for financial support. This research is a part of Master of Science dissertation and was been supported with a grant from the Deputy for Research and Technology, Kermanshah University of Medical Sciences, (grant no 94150). We thank all the participants of the study.

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