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## Original Article

# Psychological problems as the major cause of fatigue in clients undergoing hemodialysis: A qualitative study



Zahra Rezaei <sup>a</sup>, Amir Jalali <sup>b</sup>\*, Rostam Jalali <sup>c</sup>, Behnam Khaledi-Paveh <sup>b</sup>

<sup>a</sup> Student Research Committee, School of Nursing and Midwifery, Kermanshah University of medical sciences, Kermanshah, Iran

<sup>b</sup> Psychiatric Nursing Department, School of Nursing and Midwifery, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>c</sup> Nursing Department, School of Nursing and Midwifery, Kermanshah University of Medical Sciences, Kermanshah, Iran

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## ABSTRACT

**Background:** It is obvious that hemodialysis is a stressful process, leading to numerous social and psychological problems, and may cause fatigue and helplessness.

**Objective:** This study aimed to explain the experiences of hemodialysis clients regarding the effect of psychological problems on fatigue.

**Methods:** This article was extracted from a qualitative study conducted on clients undergoing hemodialysis in Khorramabad. To this end, a total of 15 participants were purposefully selected using the snowball sampling method and the required data was collected using individual, face to face, detailed and semi-structured interviews. There were 12 client interviewees and one doctor, one nurse and one hemodialysis client's spouse. Content analysis was used to analyze the data.

**Results:** Continuous analysis of data and documents obtained from the interviews on the hemodialysis clients' experiences and comments regarding the main causes of fatigue revealed two main categories: 1) Psychological effects with subcategories of psychological stress and exhaustion; 2) Needs and constraints with subcategories of individual and social needs and constraints.

**Conclusion:** According to the clients' speech and expression analysis, psychological impacts and disease-induced needs and constraints were the most important cause of fatigue and its continuation among these clients.

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## 1. Introduction

End-stage renal disease (ESRD) is a global problem that includes a variety of pathological processes underlying irreversible impairment of kidney function [1,2]. Having occupational concerns and social and economic problems always make individuals experience different pressures, emotions, worries, fears, and hopes. They may sometimes fit or do not fit with individuals' physical, neurological, and psychological potentials. A group of such pressures is referred to as stress [1].

Depending on their conditions, ESRD clients face many challenges that make them feel exhausted [3]. Fatigue is one of the major issues in hemodialysis clients. It is an unfavorable feeling and

a complex and debilitating disorder that causes physical and psychological disturbances [4] and severely affects their quality of life [5]. In addition, hemodialysis as a solution adopted in the treatment of clients with chronic renal failure is a stressful process, followed by numerous social and psychological issues resulting in physical and mental disorders for these clients [6]. According to Finkelstein, 25% of hemodialysis clients have some degree of psychological issues [7]. Fatigue is a common experienced in hemodialysis clients that has been reported in 42–89 percent of its prevalence studies [8].

Because fatigue is a unique experience, understanding individuals' thoughts and attitudes play a critical role in recognizing fatigue-induced psychological-social problems [3]. Fatigue is a multifactorial phenomenon [8], one of the main factors of which is psychological and biological factors as depression, physical pain, frequent treatment, female sex, and anemia [8,9]. Clients' experiences of fatigue are different and depending on the type of dialysis, gender, and their cultural context [9]. Thus, understanding fatigue, its dimensions, and the role of affecting psychological factors in its

\* Corresponding author. Department of Psychiatric Nursing, School of Nursing and Midwifery, Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran.

E-mail addresses: [a.jalali@kums.ac.ir](mailto:a.jalali@kums.ac.ir), [Jalali\\_amir@yahoo.com](mailto:Jalali_amir@yahoo.com) (A. Jalali).

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existence from the perspective of clients is of great assistance for healthcare teams, especially nurses and even caregivers. By this means, they can employ planning methods and measures that decrease the impact of this phenomenon on the clients [7].

In this regard, qualitative methods can be useful in recognizing the aspects of fatigue [3]. Qualitative research is of a holistic approach and inductive logic. Considering its nature, the qualitative studies are conducted for the detailed and comprehensive study of a phenomenon and through different procedures [10,11]. The qualitative content analysis aims at the classification of the information obtained from interview manuscripts, observation protocols, and data received from the recordings. During the analysis, the researcher deals with a number of instances or examples in each category through identifying the categories [12]. This method was adopted in the present study to examine the role of psychological factors in experiencing fatigue from the perspective of hemodialysis clients.

## 2. Methods

### 2.1. Design

This article was extracted from a qualitative study using content analysis method. Data collection and analysis procedures were carried out from July 2016 to December 2016.

### 2.2. Setting

The interviews took place at appropriate times at two hemodialysis centers, namely Shohadaye Ashayer and Shahid Rahimi hospitals.

### 2.3. Participants

In this study, it reached saturation after interviewing 12 participants when we did not find any new code. Thus, subjects of this study included ten males and two females; seven married, one widow, and four single that all of them selected by purposive sampling. All participants underwent hemodialysis over six months. The age of clients ranged from 19 to 81 years and the average duration of dialysis ranged from 1 to 11 years. From all of participants, 83.3% male, 58.3% married, 66.7% of them had been retired after hemodialysis. Other demographic characters of participants have brought in Table 1.

### 2.4. Data collection

To collect the required data, 15 semi-structured interviews each lasting 40–60 min were performed with 12 hemodialysis clients

and one doctor, one nurse and one hemodialysis client's spouse. In addition, two interviews of clients' interviews were also conducted in the presence of the clients' spouse with their own consent. In the case of any ambiguities during interviews, implementation, or analysis stages, follow-up interviews were conducted and ambiguities were resolved through revisiting the hemodialysis center or calling clients.

Participants were informed regarding the study during 'face-to-face' sessions. Those signing informed consent were asked to agree upon an appropriate time, place and recording for the interviews. All the interviews were conducted in Shohadaye Ashayer and Shahid Rahimi hospitals in khoramabad city in Western Iran. The interview open ended questions were asked with no fixed order but based on interview guide questions (Table 2). The interview guide questions were based on a critical review of existing research surrounding this subject and the goals of the study. Some of the questions include the following:

- What difficulties did you experience during hemodialysis?
- What does fatigue in hemodialysis mean to you?
- What symptoms are accompanied with fatigue experience?
- What factors would aggravate fatigue?
- In your opinion, to what extent do mental-psychological issues affect hemodialysis-induced fatigue?
- What role does the family play in preventing hemodialysis fatigue?

All of interviews was done by first author that had a history of 5 years of working with dialysis clients and was able to conduct qualitative interviews by passing courses and related workshops. The first author performed all interviews and their transcriptions in the participants' mother tongue. During interviews, some notes were taken, so that tone of the voice, words pronunciation, laugh, cry, and pause of the contributors were also recorded.

### 2.5. Data analysis

To analyze the data, a conventional content analysis method was used [13]. In this study, data analysis and data collection were performed simultaneously. To qualify content analysis and immerse in the data, we did data analysis without using any software. There was no linear path approach for data analysis and the researcher was in a cyclic process of data organization, data immersion, extraction, and classification of primary codes, data reviewing, specifying subcategories and categories, and finally exploring the relationships between categories and subcategories.

In this study, data collection and analysis took place simultaneously. The researcher listened to the first interview carefully and transcribed it. Then read transcribed version several times and

**Table 1**  
Socio-demographic characters of participants.

N	Sex	Age (yrs)	Marital status	Profession before CRF	Profession after CRF	Interval of hemodialysis (yrs)	Education level
1	M	65	Single	University staff	Retire	5	Bachelor
2	M	59	Married	Labor	Unemployed	1.5	Reading & writing
3	M	47	Single	Deriver	Unemployed	3	Diploma
4	M	54	Married	Farmer	Retire	11	Elementary
5	M	65	Married	Farmer	Retire	5	Elementary
6	M	61	Married	Clerk	Unemployed	2	High school
7	M	58	Married	Teacher	Retire	3	Bachelor
8	M	31	Single	Taxi deriver	Taxi deriver	1.5	Diploma
9	F	27	Single	Student	Unemployed	1.5	Bachelor
10	F	19	Single	Unemployed	Unemployed	1	High school
11	M	34	Married	Welder	Taxi deriver	3	High school
12	M	38	Married	Actor	Actor	1	Bachelor

**Table 2**  
Categories and sub-categories.

Main- categories	Categories	Sub-categories
Psychological Effects	Psychological stress	<i>Aversion</i> <i>Distress</i> <i>Privation</i>
	Burnout	<i>Frustration</i> <i>Helplessness</i>
Needs and Restrictions	Individual	<i>Loneliness</i> <i>Lowered Tolerance Threshold</i>
	Social	<i>Acceptance concerns</i> <i>Dependence</i>

started to demonstrate primary codes of the transcript. For primary coding, he extracted every word, phrase, sentence, or paragraph seems to be related to the phenomenon under study during line by line reading of the text and categorized them. The next transcribed interviews were also analyzed same. After encoding, the code will be categorized according to conceptual content. Finally, in order to discover the relationship between the concepts of power, sign, and effect, and direction of communication is used.

## 2.6. Truthfulness

To ensure the accuracy of data, four soundness criteria (credibility, dependability, confirmability, and transferability) proposed by Guba and Lincoln were adopted [14]. Therefore, the researchers were in a prolonged contact with the research site during the study period and this led to attracting the participants' trust and understanding the study setting.

The Participants' review was used to validate data and codes. During the sampling procedure, a wide range of clients, family members, and therapists were covered in terms of age, sex, and experience. To reach conformability of the results, the researcher tried to fully explain all stages of the study including data collection, data analysis, and development of the investigated concepts to the participants. To examine transferability of the findings, the researchers attempted to thoroughly describe the study setting. In addition, some interview texts were reviewed by observers, through which the extracted codes and categories were examined by the researchers and some therapists and relevant faculty members. In this study, ethical considerations including principles of confidentiality and obtaining informed consent for interviews, conversation recording, observation, and having the right to leave the study at any time were observed.

## 2.7. Ethical approval

This study was approved by research committee and ethical committee of Kermanshah University of Medical Sciences (No.95235, KUMS. REC.1395.197). The purpose of the study was clarified for participants and was answered to all of their questions. All participants were allowed to use the tape recorder and they were assured that their name and address would remain confidential.

## 3. Results

We acquired 557 codes; the repeated codes were removed and the final pool of codes was equal to 241. Finally, 9 sub-categories, 4 categories, and 2 main categories emerged (Table 2).

### 3.1. Psychological effects

This main category was related to the content of psychological stress and burnout. The clients' statements indicated that the majority of their fatigue experience originates from their psychological issues.

#### 3.1.1. Psychological stress

**3.1.1.1. Aversion.** Some participants asserted that they hated themselves due to long-term mental obsession about their own future, lack of decisive treatment due to limitations, and feelings of inadequacy; moreover, some others hated being dependent upon the hemodialysis machines. In this regard, the participants say:

*"I am so tired mentally that I hate myself. I feel the burden of all worlds is on my shoulders ..."* (P2), *"I'd like to be hanged rather than going to dialysis ..."* (P12), *"I'm frustrated during those few hours of dialysis and feel more exhausted. My nerve was frayed ."* (P4)

**3.1.1.2. Distress.** Hemodialysis clients are subjected to extreme distress due to having numerous problems in physical and mental dimensions and being worry about their illness consequences. They suffer from this disease and hemodialysis. In this regard, some clients mention,

*"When urea and creatinine levels are high, the sodium and potassium levels are not balanced, and this horrifies everyone. Under such a condition, we are under pressure and being crushed ..."* (P12); *"It (dialysis) affects all my life ... I feel that it (dialysis) would always be with me until the end of my life. This makes me sad. This really hurts and is too bad ..."* (P10); *"Last night, I felt very depressed. I picked my drum and played a sad song (on why I got this disease) in my own dialect and my wife cried with me ...."* (P12)

**3.1.1.3. Privation.** The important issue in this category is to identify limitations experienced and being different from others. Expression of some participants in this regard is as follows:

*"They are constantly on my nerve; I fight with them because I think they have something of which I am deprived ... so I am always disputing ...."* (P10); *"I have no incentive to continue since I know that this disease would always exist. It has taken away everything; I have no incentive, no patience, and nothing else ..."* (P10); *"I understand all those around me. Yeah, I got a problem...."* (P8)

#### 3.1.2. Burnout

Long-term involvement with disease-induced problems causes mental stress in individuals. It not only worsens the physical fatigue but also is the most critical issue that makes an individual give up and leads to psychological crisis. With prolonged psychological issues and lack of solutions to get rid of psychological crisis, one would experience psychological burnout and its symptoms can be observed in one's statements.

**3.1.2.1. Frustration.** It can be extracted from the clients' statements that they feel frustrated because of the disease chronicity and lack of treatment for it. Thus, they consider their future gloomy and have no schedule for their future, abandon their goals, and

sometimes express that they are expecting death. Some expressions are as follows:

*“Future does not make sense to me and I have no incentive to continue but fatigue and helplessness. Future is really black .... ” (P10), “Dark, Gloomy, I have no future. We are not looking forward to tomorrow let alone future .... ” (P7), “I have no incentive to continue since I know that this disease would always exist. It has taken away everything; I have no incentive, no patience, and nothing else .... ” (P9)*

**3.1.2.2. Helplessness.** According to the participants, they feel being entangled in a bad condition making it impossible to escape. They express,

*“How long does it last and what will be the end like?” (P7) “I wish God either kill us or save us from dialysis. God can either kill or save you. There is no other solution ... Pity us ....” (P5); “Dialysis is even worse than cancer ... It always makes me sad because it always continues. It is really worse than cancer ....” (P10)*

## 3.2. Needs and restrictions

This main category is relevant to individual and social needs and restrictions. Clients undergoing hemodialysis have some needs and restrictions due to their dependence upon hemodialysis devices. The restrictions affecting the clients psychologically are mostly reflected in one's activities and interactions. They either deliberately or non-deliberately affect one's personal and social activities.

### 3.2.1. Individual

**3.2.1.1. Loneliness.** According to the participants' statements, loneliness can leave a person feeling emotionally numb, despondent, isolated, and empty. They consider it as a vague feeling showing that something is not right. Some also understand loneliness caused by extreme limitations and pain. Most participants expressed their lack of willingness to communicate. This isolation is the result of clients' physical conditions and their lower tolerance threshold level. They say:

*“I always like nobody talks to me to take a rest, I am too tired, extremely tired .... ” (P2); “Once I was in Ramsar, I got dialysis. Then, I went to an amusement park in the evening. I was with eight friends. They took me to the hospital; they suffered more than I did. They annoyed. I'm trying to go around with a couple of my friends, not with many of them .... ” (P3)*

**3.2.1.2. Lowered tolerance threshold.** A majority of hemodialysis clients report symptoms such as irritability, rapid reactions to others' behaviors, lack of anger control, aggression, a sullen face, impatience, and perceived behavioral changes compared to periods prior to the disease emergence. The common statements in this regard are:

*“I'm so sensitive, offended. I get angry quickly .... ” (P1) “I am bored; I get angry quickly. For example, I discuss with my wife a lot and I get sad. For example, she says something and because I'm tired and feel blue, I tell her not to repeat that word, not to do that, not to touch me, or let me alone ....” (P5) One of clients' wife says about his behavioral change: “Prior to getting dialysis, he never got angry or upset at all. He has changed a lot. He gets angry too*

*quickly. You know, if I tell him that is not true, he gets disturbed and angry. We say nothing and do not disturb him ....” (P14)*

### 3.2.2. Social

**3.2.2.1. Acceptance concerns.** Due to their limitations, clients feel frustrated and weak. Improper treating with patients makes them be rejected by the society. These people need to be accepted by family, friends, relatives, and society such that to be able to regain their confidence. Statements of the participants in this regard are presented below:

*“There are many things that would have an effect, including speaking with a friend, collaboration, feeling like others concern and love you and never let you alone ....” (P1), “I opened my heart to my wife and this made me relaxed ....” (P12) “My relatives come visit me. This is pleasing because I know I am important to someone and this influences me ....” (P8)*

**3.2.2.2. Dependence.** Hemodialysis clients are limited in their social activities due to their dependence on hemodialysis machines and struggle with their own disease. They often experience some degree of dependence on others.

*“I cannot take a trip .... For example, I was in Boroujerd last night. My friends insisted me to stay there . But I came back. I had to get dialysis today. If there was no dialysis, I would ....” (P3), “ sometimes I am not able to get off. I ask someone to take me off .... ” (P11)*

## 4. Discussion

The results of this study showed that two main categories of psychological problems, the needs, and restrictions of hemodialysis patients, are among the main causes of fatigue in them. Psychological effects such as tension and burnout, which include the following influencing codes, can cause chronic fatigue of the patients during hemodialysis. The results of the studies are consistent with the findings of the present study. Negative emotional experiences in hemodialysis patients such as depression and anxiety disrupt the quality of life of patients with chronic fatigue syndrome [5,6]. Research has shown that chronic diseases [15], psychosocial stress [16], and chronic pain cause psychological effects on patients [17].

The results showed that fatigue in hemodialysis clients has a direct impact on their quality of life. The data analysis revealed the major role of psychological factors in fatigue during hemodialysis. In a qualitative research on the quality of life in Thai hemodialysis clients, the authors pointed out the psychological issues in hemodialysis clients [18]. Despite the similarity of the main categories, the categories specified are not consistent with the ones mentioned in the present study. In other studies, psychological issues were reported in early stages of hemodialysis [3,18]. These findings are in line with the results obtained in the current study. In another qualitative study on the effect of loss in life on the hemodialysis clients' experience, authors considered the loss as the essence of this experiences [19]. In qualitative studies, the psychological codes [3,20] have been well documented in quantitative studies in relation to psychological problems with hemodialysis [4,7]. From these studies, it can be concluded that factors such as the frequency of drug therapy, chronic illness, and psychological problems can affect fatigue. In the present study, the

psychological aspects of quantitative and qualitative research were confirmed by participants' sentences.

Aversion was a concept expressed by the clients in this study. Research showed that most clients refer to the hemodialysis machine as a life-saving tool [21]. Participants in this study also mentioned the critical role of the hemodialysis machine, its lower costs, and ease of use compared to transplantation; however, some of the participants hated from being dependent upon hemodialysis machine. Some authors also introduced aversion in a long-term treatment as a central code. In their study, a majority of participants were weary from long-term treatments and exhibited this aversion as being bored and escaping from long-term treatment [3]. In another qualitative study, the concepts of endless hope and the sense of being trapped were the main codes that could be due to illness and lack of hope [21]. Results some studies were showed that quality of life in hemodialysis patient influenced psychosocial factors [22] and other interaction with friends and caregivers [6]. Research has shown that chronic diseases [15], social-psychosocial stress [16], and chronic pain have psychological impacts on the clients [17]. According to these studies, hemodialysis is also a chronic disease and hemodialysis clients experience stress and pain resulting from the disease.

According to the findings of this study and aforementioned studies, it can be concluded that clients in the case of chronic diseases such as hemodialysis are at risk of psychological damage. Moreover, psychological codes [3,21] and significant relationship between psychological issues and hemodialysis [19] are presented in qualitative and quantitative research, respectively. The strength of this study is showing the contribution of psychological issues as a major factor in creating and sustaining fatigue according to the clients' statements.

Some studies were showed that hemodialysis patients, restrictions such as unemployment, more drugs, less exercise, and aging lead to an exacerbation of depression, which in turn has the greatest effect on fatigue [4,22,23]. On the other hand, chronic fatigue syndrome leads to physical and neurological disabilities that affect psychosocial indices and quality of life [6]. Monaro et al. in their qualitative study, "Lack of Life", highlight the lack of hemodialysis patients' experiences as the essence of the experiences of patients with dialysis [19]. Nix in his own qualitative study, "Feeling trapped falling", emphasized these contributors [21]. What has been described as lack of life and feeling trapped falling in these two studies can be consistent with the subcategories of the present study, which are called individual and social constraints. We found that they experience and suffer from individual disabilities and limitations in the environment. Our limitations in this study can be noted the female clients' reluctance to participate in the study due to cultural constraints, also the participants' tiredness during the interview, which was inevitably followed by three interviews during two sessions.

## 5. Conclusion

Although hemodialysis clients suffer from complex conditions and psychological issues caused by several factors, including the nature of the disease, hemodialysis treatment or disease-induced fatigue, and family conditions, other underlying diseases may even be among the factors affecting the fatigue experience. Participants' statements in the present study showed that hemodialysis clients suppose fatigue is caused by hemodialysis problems, especially psychological issues. In fact, long-term mental obsession with thoughts of lack of freedom from disease, lack of decisive treatment, tangible experience of disability, lack of support needs met and giving the life goals up leads to experiencing negative feelings of frustration, distress, aversion from oneself and therapy,

sense of loss, fatigue, and helplessness, causing him personal and social restrictions and isolation. All these factors result in experiencing chronic fatigue syndrome and the necessity of immediate intervention to balance these clients' negative emotions and fatigue is highlighted.

## Conflicts of interest

None.

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## Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2018.07.001>.

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