Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 17s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Fatigue level of the Patients undergoing Scheduled for Regular Hemodialysis Sessions

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Cite this paper as: Mohammed Rashid Owied, Sahar Adham Ali, (2025) Fatigue level of the Patients undergoing Scheduled for Regular Hemodialysis Sessions. *Journal of Neonatal Surgery*, 14 (17s), 723-728.

ABSTRACT

Background: Fatigue is a prevalent and debilitating symptom among patients undergoing regular hemodialysis, significantly impacting their quality of life. It manifests before, during, and after dialysis sessions, contributing to physical, psychological, and emotional challenges. Hemodialysis patients, particularly those with end-stage kidney disease (ESKD), often experience a high burden of symptoms that negatively affect their daily functioning and self-care practices.

Objectives: This study aimed to assess the level of fatigue among patients undergoing scheduled hemodialysis sessions and to explore the relationship between fatigue and certain demographic variables, such as age, sex, and level of education.

Methodology: A quantitative descriptive design was employed, with data collected from 100 hemodialysis patients at Al-Sader Medical City in Al-Najaf Al-Ashraf, Iraq. Participants were selected based on specific criteria, including age (30-60 years), duration of hemodialysis (more than one year), and frequency of sessions (three times per week). The Fatigue Assessment Scale (FAS) was used to measure fatigue levels, and sociodemographic and clinical data were collected to analyze potential correlations.

Results: The findings revealed that the majority of hemodialysis patients experienced significant levels of fatigue, with physical exhaustion being the most prominent symptom. Mental fatigue and reduced motivation were also prevalent. No statistically significant relationships were found between fatigue levels and demographic variables such as age, sex, or education level. However, the study highlighted that fatigue severely impacts patients' ability to perform self-care activities, leading to a decline in overall quality of life.

Conclusion: Fatigue is a critical issue among hemodialysis patients, directly affecting their self-care capabilities and quality of life. Addressing fatigue through targeted interventions, such as nutritional and exercise programs, is essential to improve patient outcomes.

Recommendations: It is recommended that healthcare providers implement educational and therapeutic programs focused on reducing fatigue in hemodialysis patients. These programs should include guidance on proper nutrition, physical activity, and energy conservation techniques to enhance self-care practices and overall well-being.

Keywords: *Fatigue, Hemodialysis, Self-care, Quality of Life, End-Stage Kidney Disease (ESKD).*

1. INTRODUCTION

Hemodialysis-related fatigue is a prevalent and frequently incapacitating condition that lowers patients' quality of life. Before hemodialysis, intradialytic weariness appears or gets worse, and it lasts the entire hemodialysis procedure[1]. Hemodialysis (HD) patients with end-stage kidney disease (ESKD) experience a significant load of symptoms both during and after hemodialysis treatments, which negatively affects their quality of life. Fatigue is among the most prevalent, upsetting, and incapacitating symptoms. Fatigue is a complex phenomenon that involves physical, psychological, and emotional components.[2] Despite the fact that patients with ESKD frequently experience persistent chronic fatigue, there are two other types of fatigue in this patient group that are connected to the scheduling of dialysis sessions: (1) Intradialytic fatigue (IDF)

occurs or gets worse right before the dialysis session and lasts the entire course of treatment; (2) Postdialysis fatigue (PDF) occurs or gets worse after the dialysis session is over and can last for hours. [3] [4]

Hemodialysis is a costly and time-consuming procedure that necessitates stricter dietary and hydration guidelines. Long-term hemodialysis results in diminished or nonexistent income, loss of independence, reliance on the caregiver, and disturbances to social life, marriage, and family. Each of these elements influences the quality of patients. of living things [5].

Hemodialysis is the most popular treatment for these patients, and its widespread availability has helped hundreds of thousands of patients live longer. Hemodialysis patients frequently experience fluid overload as a result of renal failure. Patients receiving hemodialysis face a number of issues, such as insomnia, peripheral neuropathy, infections, anemia, itching, skin color changes, loss of consciousness, and other issues that impact various facets of their lives.[6]

In order to reduce complications and enhance quality of life, patients must be included in the care and treatment process. Self-care refers to taking care of oneself or altering circumstances or goals in one's surroundings in order to improve one's own life, health, or general well-being.[7]

According to earlier research, hemodialysis patients struggle with self-care in all functional domains, which indicates that they engage in very few self-care activities. Numerous studies demonstrate that patients' ignorance of self-care practices, such as following dietary guidelines, drinking enough water, and maintaining vascular access, can have a negative impact on their health and increase their risk of death and other issues.[8]

Fatigue reduces self-care activities, disrupts familial and social roles, and decreases the ability to perform routine activities and can lead to unemployment and increased dependence on health care, negatively affecting patient quality of life and self-confidence[9].

Compared to patients with normal kidney function, 60 to 97% of hemodialysis patients report feeling fatigued to some extent. Uremia, anemia, sleep difficulties, and psychosocial distress are some of the causes that contribute to weariness in hemodialysis patients; many of these conditions may be treatable. [10]

Objectives of the study:

1. To assess fatigue level among patients undergoing regulated hemodialysis sessions.
2. To find out relationship between some demographical variables and fatigue level among hemodialysis patients

2. METHODOLOGY

Study sample

The study was applied at a hemodialysis center in al-sader medical city in al-najaf al-ashrif, with a purposive sample of 100 patients. The participants selection criteria were as follows: aged between 30 to 60 years, the patient has been undergoing hemodialysis for more than ayear, and the patient have 3 sessions per week. The exclusion criteria were as follows: quadriplegic patients and patients who cannot move, mentally ill patients, and pediatric patients. Patients who met the inclusion criteria were informed about the purpose and procedure of the study and confidentiality was assured. Before collecting data, we obtained approval from the Ethics. The study was carried out from November 2024 to December 2024.

Research Design

A descriptive cross-sectional study design will be adopted to explore fatigue level among patients undergoing hemodialysis. This design allows the collection of data at a single point in time and provides insights into the current self-care behaviors and levels of fatigue in the target population.

Sample Size

A sample size of 100 hemodialysis patients will be determined using appropriate statistical methods. Purposive sampling will be used to recruit participants, ensuring representation from diverse demographics within the target population

Data Collection Tools.Fatigue Assessment Scale (FAS): A validated tool to measure fatigue levels in hemodialysis patients. The FAS includes both physical and mental fatigue components.

Sociodemographic and Clinical Data Form: This form will collect information such as age, sex, level of education, duration of dialysis, comorbidities, and lifestyle factors.

Data Analysis

Quantitative data will be analyzed using spss. Descriptive statistics (mean, median, standard deviation) will summarize sociodemographic, clinical characteristics. A p-value of <0.05 will be considered statistically significant

3. RESULTS

Table 1. Demographic characteristics of the study sample.

Demographical V.	Rating and interval	Frequency	Percentage
Age group	30-39	7	7%
	40-49	37	37%
	50-60	56	56%
Total		100	100%
sex	male	42	42%
	female	58	58%
Total		100	100%
Level of education	Illiterate	19	19%
	Able to read and write	41	41%
	Primary school	40	40%
Total		100	100%
working	work	23	23%
	Not working	77	77%
Total		100	100%
Residence	Urban	43	43%
	Rural	57	57%
Total		100	100%

Table 2. Clinical information of the study sample.

Clinical V.	Rating and interval	Frequency	Percentage
Duration	1-3 year	47	47%
	4-6 year	44	44%
	More than 6 year	9	9%
Total		100	100%
Chronic disease	None	7	7%
	Hypertension	93	93%
Total		100	100%

Table 3.Level of fatigue for patients undergoing hemodialysis.

No.	Questions	N	Mean	Std. Deviation	Std. Error Mean	P.value
1	I am bothered by fatigue	100	4.46	.540	.054	0.000

2	I get tired very quickly	100	4.51	.502	.050	
3	I don't do much during the day	100	4.38	.546	.055	
4	I have enough energy for everyday life	100	4.52	.502	.050	
5	Physically, I feel exhausted	100	4.56	.499	.050	
6	I have problems to start things	100	4.43	.498	.050	
7	I have problems to think clearly	100	3.81	.662	.066	
8	I feel no desire to do anything	100	4.00	.000[a]	.000	
9	Mentally, I feel exhausted	100	4.00	.636	.064	
10	When I am doing something, I can concentrate quite well	100	4.02	.651	.065	

MS. Mild Fatigue ≤ 2.3 , Moderate Fatigue = (2.4 -3.7) , Severe Fatigue < 3.7

Table 4.Association between some demographical data (Age, Sex, Level of education) and fatigue.

NO.	Variable	N	Chi-Square value	DF	Sig.
1	**Age group**	**100**	**20.690**	**16**	**0.191**
2	**Sex**	**100**	**4.230**	**8**	**0.838**
3	**Level of education**	**100**	**17.998**	**16**	**0.324**

4. DISCUSSION

A persistent sensation of intense physical and mental depletion that doesn't seem to go away with rest is called fatigue. It is a very common condition among those who suffer from chronic illnesses like depression, rheumatologic diseases, and chronic pain; patients have poorer health-related quality of life (QOL), lower survival rates, and generalized weakness, decreased exercise tolerance, mental exhaustion, and sleep disorders. It alters parental responsibilities, limits social life involvement, increases reliance on caretakers, and impairs the capacity to carry out daily tasks[11].

Part One: Discussion for Patients' Socio-Demographic Data:

The sample of hemodialysis patients used in this study was drawn from a specific age range between 30 and 60 years old in order to maintain sample homogeneity, prevent contamination, and improve the accuracy of the results. Age was excluded as a potential contributing factor. Change in the outcomes. The sample (100) patient undergoing hemodialysis, more than half with age between (50-60) year, while (35.9%) of the sample age between (40-49)year and low frequency with age under 40 year The sample was also collected in a similar manner, including males and females. Females constituted a slight increase in the sample by 58%. The study also revealed that the great majority of hemodialysis patients have relatively low levels of education. This could be because people with lower levels of education are more susceptible to illnesses, particularly kidney diseases, because they are less likely to follow the right healthy habits that would lower blood pressure or diet. medical treatment that preserves the overall well-being of the body's systems, which is in line with research findings. [12]. Most of the study participants not working this may be reults to fatigue and activity intolerance who associated to hemodialysis [13]. As well as more than half of study sample were rural residence about (57)%

Part Two: Related to the patients clinical information

According to the study's clinical data, the great majority of the sample had hypertension, which accounted for almost 93% of their amnesia. This finding was also supported by other research. The primary cause of kidney failure, which results in hemodialysis, is thought to be hypertension. Hypertension is a crucial risk factor for the development of chronic kidney disease, progression to end-stage renal disease (ESRD), cardiovascular disease (CVD), and mortality. Accordingly, several guidelines recommend early detection and treatment of HTN to delay the disease's progression and reduce its complications in both sexes [14]

Part Three: Discussion the level of fatigue among patient with hemodialysis and self care deficit and some demographical characterstic:

The data in Table 3 provides insight into the fatigue level experienced by the study sample across ten fatigue assessment scale. The analysis is based on responses from 100 participants, with mean scores reflecting the average level of agreement with each statement (on a Likert scale), standard deviations indicating variability, and p-values highlighting statistical significance. High Levels of Fatigue for the Most Questions: High mean scores for statements like "I get tired very quickly" (Mean = 4.51, SD = 0.502) and "I am bothered by fatigue" (Mean = 4.46, SD = 0.540) show that people have severe fatigue symptoms. Physical exhaustion is also a major concern for the participants, as seen by the highest mean score for "Physically, I feel exhausted" (Mean = 4.56, SD = 0.499). Cognitive and Mental Fatigue: With lower, but still significant, mean scores for "Mentally, I feel exhausted" (Mean = 4.00, SD = 0.636) and "I have problems to think clearly" (Mean = 3.81, SD = 0.662), mental exhaustion is clearly present. These findings emphasize the cognitive challenges brought on by exhaustion. Lack of Motivation and Desire: With a mean of 4.00 and a distinct standard deviation of 0.000a, the statement "I feel no desire to do anything" demonstrates consistent replies from every participant. This implies that this assertion was accepted by every participant, which makes it a very noteworthy feature of their exhaustion experience. The findings suggest that fatigue is a multifaceted issue affecting the study sample physically, mentally, and motivationally. The high mean scores and low variability across most questions indicate a consistent and pervasive experience of fatigue among participants. This highlights the need for targeted interventions focusing on energy conservation, mental clarity, and motivation enhancement to address the multifactorial nature of fatigue. Hemodialysis patients frequently experience fatigue, which is a crippling condition that impairs their quality of life and capacity for self-care. Research has repeatedly shown that this cohort experiences significant levels of exhaustion, limited self-care skills, and moderate loneliness. Significantly, worse self-care skills are correlated with higher levels of weariness, suggesting that patients' ability to take care of themselves declines with increasing levels of fatigue [15]. Fatigue and self-care have a complicated relationship. Patients who experience fatigue may find it more difficult to carry out daily tasks and self-care, which can lower their sense of wellbeing and confidence[16]. The results for all three variables (age group, sex, and level of education) show p-values greater than 0.05, indicating no statistically significant relationships with the variable under study.

5. CONCLUSION AND RECOMMENDATION

In conclusion, addressing fatigue in hemodialysis patients is crucial, as it directly affects their self-care capabilities.

Adopting introductory programs for hemodialysis patients about the importance of using special exercise programs and correct healthy nutrition to reduce the level of fatigue and improve the functional performance of the body, which reflects positively on improving the level of self-care.

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