

The Effect of Fatigue on Daily Living Activities for Adults Undergoing Hemodialysis

Zeinab Faried Bahgat¹ ; Rahma Soliman Bahgat²; Hend Mohamed El- azazy³

¹Lecturer, Medical Surgical Nursing,² Prof., Pediatric Nursing,³ Assis. Prof. Medical Surgical Nursing, Faculty of Nursing, Tanta University

Abstract: Fatigue is a common and debilitating symptom for adult patients with end-stage renal disease undergoing hemodialysis and has been associated with decreased survival and quality of life.

Aim: The present study aimed to assess the effect of fatigue on daily living activities for adults undergoing hemodialysis and develop a booklet to reduce hemodialysis related fatigue to enhance patient' performance of daily living activities.

Materials and method: The study was conducted at Mubarak Hospital affiliated to Tanta University Hospitals and Elmabra Hospital in Almahala Elkobra affiliated to health insurance. One hundred adult patients who fulfill inclusion criteria were selected to participate in this study for two weeks. Three tools were used for collection of data; structured interview questioner sheet, contains demographic characteristics and health relevant data. The Fatigue Symptom Inventory to asses the degree of fatigue for adults undergoing hemodialysis and The Karnofsky Performance Status Scale to assess patient health status in relation to physical activity.

Results: All of the study samples have a specific degree of fatigue and about half of them requires care taker.

Conclusion: Fatigue effects on daily living activities for adult undergoing hemodialysis.

Recommendations: All hemodialysis patients must avoid factors that increase fatigue and follows measures to reduce fatigue and enhance performing daily living activities.

I. Introduction

End stage renal disease (ESRD) is a worldwide health problem, because this problem increases rapidly (1-3). According to the United States Renal Data System (USRDS), ESRD Annual Report, in 2011 more than 106,000 patients started ESRD treatment on hemodialysis (HD), and 7,094 started on peritoneal dialysis (PD) (1-3). The rate of new ESRD cases per million population has been relatively stable since 2000, and rose just 1.1 percent to 355 in 2009. A linear increase in the number of patients age 45–64 years continues to drives growth in the incident population; while in contrast, growth in the population age 65 years and older has slowed considerably (4). A statistical record of Mubarak Hospital affiliated to Tanta University Hospitals indicated that the number of patients admitted with ESRD for hemodialysis at (2006) was 135 patients, while the number of patients at 2011 was 150 patients (5).

End stage renal disease is the permanent, irreversible loss of the kidney function which lead to the retention of many waste and toxic products of metabolism, fluid and electrolyte imbalances , metabolic acidosis , anemia ,hypertension and decalcification of bone tissue(renal osteodystrophy) (6-9). Hemodialysis (HD) is considered the backbone of the modern treatment of irreversible kidney disease. The objective of HD is a blood purification where in toxic metabolic substances are separated and removed from the patient's blood through a semi permeable membrane into a dialysis solution (10). The permanent hemodialysis patients most commonly receive treatments three times a week for at least 3 to 4 hours per treatment (11).

Fatigue is a debilitating symptom or side effect experienced by many patients on long-term dialysis. It has a considerable effect on patients' health-related quality of life and is viewed as being more important than survival by some patients. The prevalence of fatigue ranges from 60% to as high as 97% in patients on long-term renal replacement therapy (12-15). Fatigue is defined as self recognized state in which an individual experiences an overwhelming, sustained sense of exhaustion and decreased capacity for physical and mental work that is not relieved by rest (16).

Moreover fatigue can refer to subjective symptoms of malaise and aversion to activity or to objectively impaired performance; it is characterized by a profound lack of energy, feeling of muscle weakness, and slowed movement. Also fatigue is a pathological feature of a variety of medical conditions, but it is obvious that otherwise healthy individuals also experience periods of fatigue (17). People with chronic renal disease, regardless of whether they are pre dialysis or receiving either HD or PD, are reported having high levels of fatigue and are often unable to engage in normal daily activities (18) . Fatigue can negatively influence the self care ability and quality of life for both patients and caregivers (19-21). Depending on the severity of fatigue, sometimes patients can't perform their activities of daily living as; eating, bathing, dressing, toileting, transferring (walking), continence, or can only do so to a lesser degree (22-24).

Despite the importance of fatigue to patients, health care providers remain largely unaware of both the presence and severity of fatigue among dialysis patient (25). Although the clinical assessment of fatigue in dialysis patients has proven difficult for physicians, it is important to recognize fatigue since there are a number of treatable causes (26). So the nurse roles in the dialysis unit are; assessment of patient fatigue and teach the patients to be aware that hemodialysis related fatigue (HRF) affects the whole body system and interfere with daily living activities and help them to manage HD associated fatigue.

Aim of the study

To assess the effect of fatigue on daily living activities for adult undergoing HD and develop a booklet to help the patient to reduce HD related fatigue thus; enhance their performance of daily living activities.

Research hypothesis:

It was hypothesized that there is a relationship between HD and fatigue and there is a relationship between fatigue and daily living activities.

3- Materials and method

Study design

The study was a descriptive cross sectional design.

Setting

This study was conducted at the HD department in the following hospitals, Mubarak Hospital affiliated to Tanta University Hospital, and Elmabra Hospital affiliated to health insurance.

Sample

Consisted of 100 adult patients undergoing hemodialysis. The patient enrolled in this study were both sexes undergoing HD, patients with cancer, tuberculosis, human immune deficiency syndrome (AIDS), chronic heart diseases, liver diseases and patient on temporary HD were excluded from the sample.

Tools of data collection

Three tools were used in this study

Tool I: Assessment tool (Structured interview questioner sheet): It include two parts; Part one: patient's demographic data as age, sex, marital status, level of education, residence, family income per month, nature of occupation before and after disease. Part two: Health relevant data that include past history, starting date of hemodialysis, number of cycles or sessions per week, duration of dialysis cycle or session, sign and symptoms of fatigue, routine laboratory investigation, current medication and vital signs.

Tool II: Fatigue Symptom Inventory (FSI): was developed by Piper in 1989 (27) modified and translated into Arabic version by the researcher to assess the degree of fatigue for adults undergoing hemodialysis twice for two subsequent weeks by asking the patient 14 questions related to fatigue ;each question was given an identified score ranging from 0 to 10, with a total score of 131, and the final scores was interpreted as the following: 0-35: no fatigue, 36-64: mild fatigue, 65-84: moderate fatigue, 85-109: sever fatigue and 110-131: excessive fatigue.

Tool III Karnofsky Performance Status scale ((KPS): developed by Chandna in 1999 (28) and modified and translated into Arabic version by the researcher to assess patient' health status in relation to physical activity. The scale consisted of 10 questions which answered on a rating scale of 0-100, with 0 indicating a moribund functional state and 100 indicating normal activities. Patient was described as rehabilitated or caring for himself when his/ her karnofsky scores was 70 - 100 while he required care taker when the score 40 - 69 and required institutionalization when the score ranging from 1- 39.

A pilot study:

A pilot study was carried out on 10 patients attended the dialysis unit and accordingly modification was done.

Administrative design and ethical considerations:

Official permission was obtained to carry out the study from the head of hemodialysis unit, informed consent was obtained from the patients and / or their families to participate in the study, ethical consideration for the privacy and confidentiality of the data and results were concluded.

Actual study

The collection of the data for the present study was done during the period from 15 January 2012 to 15 April 2012. The researcher was available in the dialysis unit 6 days per week. The collected data was done in the morning and afternoon shifts, before or after dialysis session and when the patients' condition allows answering questions. The average time spend for collecting data for each patient was approximately 1 hour.

Statistical analysis

The collected data were organized, tabulated and statistically analyzed using SPSS software statistical computer package version 13. For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, comparison between two groups and more was done using Chi-square test (X²). For

comparison between means of two groups; student t-test was used. Correlation between variables was evaluated using Pearson’s correlation coefficient. Significance was adopted at $p < 0.05$ for interpretation of results of tests of significance.

II. Results

56% of the sample was female and 44% of them were male, with mean age group of 49.56 ± 12.99 . Majority of the sample 75% were married and more than half 55% of them were illiterate while only 5% had moderate education, in addition majority of the sample 82 % lives in rural areas.

Table (1): Regarding to signs of fatigue, this table illustrates that 83%, 76% and 22% of the sample have loss of work motivation, difficulty of starting and finishing daily activities and loss of body equilibrium respectively, also it was observed that there was positive correlation between study sample of Mubarak and Elmabra hospital as regarding to felling of fatigue in the morning and muscles pain with p values = 0.028, 0.008 respectively.

Table (2): This table demonstrates the degree of fatigue among the study sample in the first and second week, it was found that 41% of the study sample have sever fatigue while 5% of them have no fatigue in the first week comparing to 39% and 1% with sever and excessive fatigue respectively in the second week. The only positive correlation was found between Mubarak and Elmabra hospital related to degree of fatigue in the first week, with p values = 0.008.

Table (3): This table demonstrates the degree of daily living activities among the study sample in the first and second week, it was found that 43%, 48% of the study sample requires care taker in the first and second week respectively comparing to 4% of them who requires institutionalization in the first and second week. There was no significance correlation between Mubarak and Elmabra hospital related to degree of daily living activities.

Table (4): This table shows relationship between degree of fatigue and degree of daily living activities among the studied sample in the first week and represent that more than half (60%) of the sample with no fatigue requires rehabilitation while half of the sample (50%) with mild and moderate fatigue requires self care only and about two third of them (63.4%) with sever fatigue also requires care taker. Moreover, there was a significant negative correlation between degree of fatigue and degree of daily living activities in the first week with p values = .0001.

Table (5): This table shows relationship between degree of fatigue and degree of daily living activities among the studied sample in the second week and represent that 100% and 42.1% of the sample with no and mild fatigue requires rehabilitation and self-care only respectively, while small percent (15.4%) and (7.7%) of the study sample with moderate and sever fatigue requires rehabilitation and institutionalization respectively. In addition, there was a significant negative correlation between degree of fatigue and degree of daily living activities in the second week with p values = .0001.

Table (6): Regarding to relationship between fatigue and sex, this table illustrates that 41% and 3.6% of the study sample with sever fatigue and no fatigue respectively were female, in relation to age it was observed that 100% of the study sample with no fatigue were <20 years and 50.9% of them with sever fatigue were among the aged group 50-60 years, in relation to level of education it was observed that more than half (60%) of the study sample with sever fatigue have moderate education and 6.3% of the them with no fatigue had high education, regarding to residence the same table show that; half of the sample (50%) with sever fatigue lives in urban areas and 4.9% of them with no fatigue lives in rural areas, same table shows a significant correlation between fatigue and age in addition to educational level of the study sample with p values = .001 and .010 respectively.

Table (7): In relation to fatigue and duration of hemodialysis treatment, this table reveals that more than half (60%) of the sample with no fatigue undergoing hemodialysis from 3-<7 years and only 2.4% of them with sever fatigue undergoing hemodialysis from 1-11 month, regarding to fatigue and number of session per week, it was found that 41.2% of the sample with sever fatigue undergoing hemodialysis three times weekly and only 4.1% of the sample with no fatigue undergoing hemodialysis three times weekly and in relation to duration of each session 100% of the sample with moderate fatigue lasts 4 hours each session of hemodialysis and only small percent (4.5%) of the sample with no fatigue lasts 2 hours each session. There was no significance correlation between fatigue and hemodialysis session.

Table (1): Percentage distribution of the study sample in relation to sign of fatigue

Signs of fatigue	The study sample (N=100)						χ^2	P
	Mubarak hospital (N=49)		Elmahala Elkobara hospital (N=51)		Total (N=100)			
	N	%	N	%	N	%		

-Disturbance of sleeping and stress	34	69.4	36	70.6	70	70.0	0.01	0.930
-General weakness	31	63.3	36	70.6	67	67.0	0.32	0.571
-Difficulty in breathing	22	44.9	20	39.2	42	42.0	0.14	0.709
-Loss of appetite	30	61.2	30	58.8	60	60.0	0.06	0.807
-Loss of work motivation	41	83.7	42	82.3	83	83.0	0.01	0.928
-Loss of concentration	32	65.3	40	78.4	72	72.0	1.53	0.215
-Difficulty of starting and finishing daily activities	34	69.4	42	82.3	76	76.0	1.65	0.199
-Loss of ability to move	22	44.9	29	56.9	51	51.0	0.99	0.319
-Tremors of external part	18	36.7	17	33.3	35	35.0	0.82	0.883
-Muscle tension	22	44.9	26	51.0	48	48.0	0.17	0.683
-Muscle stiffness	25	51.0	20	39.2	45	45.0	0.97	0.324
-Blurred of vision	36	73.5	30	58.8	66	66.0	1.78	0.182
-Malaise	27	55.1	31	60.8	58	58.0	0.14	0.709
-Depression	15	30.6	27	52.9	42	42.0	1.04	0.175
-Headache	34	69.4	37	72.5	71	71.0	0.86	0.353
-Loss the ability to make decision	16	32.6	20	39.2	36	36.0	0.16	0.690
-Morning fatigue with length of sleeping hours	23	49.9	36	70.6	59	59.0	4.84	0.028*
-Loss of body equilibrium	12	24.5	10	19.6	22	22.0	0.12	0.728
-Muscles pain	24	49.0	39	76.5	63	63.0	6.97	0.008*

Table (2): Percentage distribution of the study sample in relation to degree of fatigue

Degree of fatigue	The study sample (N=100)						χ^2	P
	Mubarak Hospital(N=49)		Elmabara Hospital(N=51)		Total (N=100)			
	N	%	N	%	N	%		
•First week:								
No fatigue (0-<36)	5	10.2	0	0	5	5.0	11.749	0.008*
Mild (36-<65)	12	24.5	8	15.7	20	20.0		
Moderate (65-<85)	10	20.4	24	47.1	34	34.0		
Severe (85-<110)	22	44.9	19	37.3	41	41.0		
•Second week:								
No fatigue (0-<36)	2	4.1	0	0	2	2.0	8.843	0.065
Mild (36-<65)	12	24.5	7	13.7	19	19.0		
Moderate (65-<85)	13	26.5	26	51.0	39	39.0		
Severe (85-<110)	21	42.9	18	35.3	39	39.0		
Excessive (≥110)	1	2.0	0	0	1	1.0		
χ^2	2.70		0.17		2.70			
P	0.609		0.917		0.609			

Table (3): Percentage distribution of the study sample in relation to degree of daily living activities

Degree of daily living activities	The study sample(N=100)						χ^2	P
	Mubarak hospital (N=49)		Elmabara hospital (N=51)		Total(N=100)			
	N	%	N	%	N	%		
•First week:								
on(1-39)	2	4.1	2	3.9	4	4.0	2.124	0.547
-Requires care taker (40-69)	24	49.0	19	37.3	43	43.0		
-Self care only (70-79)	17	34.7	19	37.3	36	36.0		
-Rehabilitated (≥80)	6	12.2	11	21.6	17	17.0		
•Second week:								
on(1-39)	2	4.1	2	3.9	4	4.0	0.406	0.939
-Requires care taker (40-69)	25	51.0	23	45.1	48	48.0		
-Self-care only (70-79)	13	26.5	16	31.4	29	29.0		
-Rehabilitated (≥80)	9	18.4	10	19.6	19	19.0		
χ^2	1.15		0.69		1.14			
P	0.764		0.876		0.767			

Table (4): Correlation between degree of fatigue and degree of daily activities among the study sample in the first week of assessment.

Degree of daily living activities in the 1 st week	Degree of fatigue among the study sample (N=100)								χ^2	P
	No fatigue (N=5)		Mild (N=20)		Moderate (N=34)		Severe (N=41)			
	N	%	N	%	N	%	N	%		
•First week:										
-Requires institutionalization	0	0	0	0	0	0	4	9.8	34.447	0.0001*
-Requires care taker	0	0	3	15.0	14	41.2	26	63.4		
-Self care only	2	40.0	10	50.0	17	50.0	7	17.1		

The Effect of Fatigue on Daily Living Activities for Adults Undergoing Hemodialysis

-Rehabilitated	3	60.0	7	35.0	3	8.8	4	9.8		
r	-0.623									
P	0.0001*									

Table (5): Correlation between degree of fatigue and degree of daily activities among the study sample in the second week of assessment.

Degree of daily living activities in the 2 nd week	Degree of fatigue among the study sample (N=100)										χ^2 P
	No fatigue (N=2)		Mild (N=19)		Moderate (N=39)		Severe (N=39)		Excessive (N=1)		
	N	%	N	%	N	%	N	%	N	%	
•Second week:											
-Requires institutionalization	0	0	0	0	0	0	3	7.7	1	100	75.136
-Requires care taker	0	0	0	0	20	51.3	28	71.8	0	0	0.0001*
-Self-care only	0	0	8	42.1	13	33.3	8	20.5	0	0	
-Rehabilitated	2	100	11	57.9	6	15.4	0	0	0	0	
r	-0.748										
P	0.0001*										

*Significant (P<0.05)

r= Correlation Coefficient

Table (6): Correlation between degree of fatigue of the study sample and their demographic data.

demographic data	Degree of fatigue among the study sample (N=100)								χ^2	P
	No fatigue (N=5)		Mild (N=20)		Moderate (N=34)		Severe (N=41)			
	N	%	N	%	N	%	N	%		
•Sex:										
Males	3	6.8	11	25.0	12	27.3	18	40.9	2.548	0.467
Females	2	3.6	9	16.1	22	39.3	23	41.1		
•Age:										
<20	1	100	0	0	0	0	0	0	34.774	0.001*
20-29	0	0	4	57.1	1	14.3	2	28.6		
30-39	1	11.1	3	33.3	4	44.4	1	11.1		
40-49	0	0	7	25.0	11	39.3	10	35.7		
50-60	3	5.5	6	10.9	18	32.7	28	50.9		
•Marital status:										
Single	1	9.1	3	27.3	3	27.3	4	36.4	4.729	0.857
Married	4	5.3	16	21.3	26	34.7	29	38.7		
Divorced	0	0	0	0	0	0	1	100		
Widowed	0	0	1	7.7	5	38.5	7	53.8		
•Level of education:										
High	1	6.3	3	18.8	6	37.5	6	37.5	26.283	0.010*
Moderate	1	20.0	1	20.0	0	0	3	60.0		
Diplom	2	18.2	6	54.5	2	18.2	1	9.1		
Read & write	1	7.7	4	30.8	4	30.8	4	30.8		
Illiterate	0	0	6	10.9	22	40.0	27	49.1		
•Residence:										
Rural	4	4.9	17	20.7	29	35.4	32	39.0	0.819	0.845
Urban	1	5.6	3	16.7	5	27.8	9	50.0		
Not enough	1	5.0	4	20.0	5	25.0	10	50.0	2.196	0.901
Enough and spare	1	2.9	6	17.1	14	40.0	14	40.0		
Enough and not spare	3	6.7	10	22.2	15	33.3	17	37.8		

*Significant (P<0.05)

r= Correlation Coefficient

Table (7): Correlation between degree of fatigue and hemodialysis session of the studied sample

Variables	Degree of fatigue among the study sample(N=100)								χ^2	P
	No fatigue (N=5)		Mild (N=20)		Moderate (N=34)		Severe (N=41)			
	N	%	N	%	N	%	N	%		
•Duration of hemodialysis										
1-6months	0	0	0	0	2	5.9	1	2.4	7.926	0.927
7-11 months	0	0	1	5.0	1	2.9	1	2.4		
1-<3 years	2	40.0	5	25.0	12	35.3	12	29.3		
3-<7 years	3	60.0	8	40.0	11	32.4	11	26.8		
7-<12 years	0	0	5	25.0	6	17.6	13	31.7		
12-15 years	0	0	1	5.0	2	5.9	3	7.3		
•No. of cycles/week										
2	1	33.3	1	33.3	0	0	1	33.3	6.336	0.096

3	4	4.1	19	19.6	34	35.1	40	41.2		
•Duration of each cycle (hours):										
2	2	4.5	6	13.6	17	38.6	19	43.2	6.718	0.348
3	3	5.6	14	25.9	15	27.8	22	40.7		
4	0	0	0	0	2	100	0	0		

III. Discussion

Demographic characteristics of the study sample: the finding showed that more than half of the studied subjects were females. This finding was in agreement with Liu (2006) (29) & Morsch, et al (2006) (30) and O'Sullivan et al (2007) (31) who reported that most of the sample were female. This finding was contradicted with Dawood (1999) (32) who recorded that the ratio between male and female patients undergoing hemodialysis was 2:1 respectively and Kamal (2001) (33) who recorded that two third of the sample were male. Also it was found that more than half of the studied subjects were within age group of (50-60) years. This finding was in line with Jhamb et al (2011) (34) & Bossola et al (2009) (35) & Koyama et al (2010) (36) and Letchmi, et al (2011) (37) who found that most of the sample under age group 40-60 years.

On the other hand this finding was contradicted with Liu (2006) (29) who recorded that most of the study sample under thirty years. In addition, the finding was contradicted with Dochi (2007) (38) who showed that most of the subjects were single. Also the current study showed that more than half of the studied subjects were illiterates. This finding was in contrast with Kamal (2001) (33) who recorded that half of the study sample were educated. Furthermore this finding was contradicted with Kim et al (2005) (39) who noted that the illiterate patients were equal with educated patients in his sample.

Fatigue and demographic characteristics: The finding showed that near half of the studied subjects with sever fatigue was females. This finding was inline with Liu (2006) (29) & Morsch, et al (2006) (30) and O'Sullivan et al (2007) (31) who found that women report higher levels of fatigue than men. This finding was contradicted with Kim et al (2005) (39) who showed that no correlation between fatigue and sex.

Regarding to level of fatigue; it was found that half of the studied subjects with sever fatigue were within age group of (50-60) years and all of the studied subjects with no fatigue were within age group of <20 years. This result may be attributed to the fact that the majority of the older age not works and bed ridden most time of the day. This finding was in the same line with Liu (2006) (29) & Jhamb et al (2011) (34) & Bossola et al (2009) (35) & Koyama et al (2010) (36) & Letchmi, et al (2011) (37) who found that patients receiving hemodialysis in their early sixties reported significantly higher total fatigue levels than those in their thirties. This finding was In contrast with Clark et al (2002) (40), who found that most of the sample was within age group of (15-30) years.

Also the finding reported that all of the studied subjects with sever fatigue were divorced. This finding explained by the divorced persons has life burden and stress. This finding was in line with Dochi (2007) (38) who showed that unmarried was more associated with fatigue than married .The current study showed that half of the studied subjects with sever fatigue were illiterates , more than half of them with mild fatigue have diplom . This result justified by the illiterate's person is not able to accommodate with disease prognosis. This finding was in line with Mizuno (2011) (41) who found that the illiterate patients feel higher fatigue level than educated patients. In contrast with Liu (2006) (29); found that no relation between fatigue and educational level.

Moreover, the finding showed that more than half of the sample with no fatigue undergoing hemodialysis treatment between 3- <7 years ago, one third of the sample with sever fatigue undergoing hemodialysis treatment between 7- <12 years ago. This result justified by the fact that, with the long duration of hemodialys is treatment, the fatigue level increases. This finding was inline with Santhna et al (2011) (42) who recorded that there was a significant relationship between the duration of treatment and the level of fatigue.

The current study revealed that about half of the study subjects with sever fatigue undergoing hemodialysis three times weekly. This finding was similarly with Jhamb et al (2008) (43), who reported that there was a significant relationship between the number, duration of the hemodialysis session and the level of fatigue. The current study represented that there was significant correlation between fatigue and age, occupation, past medical history and educational level of the study sample.

In relation to signs and symptoms associated with fatigue: the finding was noted that most of the studied subjects have loss of work motivation, difficulty of starting and finishing daily activities, loss of concentration, headache and disturbance of sleeping. This finding accepted with Lee (2007) (44) & Heiwe (2003) (45) & Brunier (1993) (46) who recorded that most of sample have difficulty remembering and concentrating, role limitations, inability to carry out daily activities and lacking physical energy.

The current study demonstrated that there are four degree of fatigue, mild, moderate, sever and excessive fatigue. In the first week of assessment the finding demonstrated that; about half of the sample had sever fatigue and one third of them had moderate fatigue while in the second week of assessment , one third of the sample had either sever or moderate fatigue. This finding was in line with Sklar et al (1996) (47) & Niels et

al (2007) (48) and Hye- et al (2005) (49) who noted that that there are different degree of fatigue and the degree differs in severity from the first assessment to the second one.

Degree of daily living activities: The current study noted that about half of the sample requires care takers in the first and second week of assessment .This finding was in line with Kamal (2001) (33) who noted that about three quarters of patients required care taker & Lok (1996) (50) & Ferrans, et al (1993) (51) who found that daily living activities in hemodialysis patients less than average and requires care taker. This finding in contrast with Mokabel (2000) (52) & Evans et al (1985) (53) who noted that the hemodialysis patients donning daily living activities better than patient used other methods of dialysis. Also this study contradicted with Carlson et al. (1987) (54) who showed that most of the sample were rehabilitated and caring for themselves.

Correlation between fatigue and daily living activities: In the first week of assessment the current study represented that more than half of the sample with no fatigue requires rehabilitation while half of the sample with mild and moderate fatigue requires self care only and more than half of the sample with sever fatigue requires care taker, also there was a significant negative correlation was found between degree of fatigue and degree of daily living activities. So when the fatigue increases the daily living activities decreases and when the fatigue decreases the daily living activities increases. This finding was inline with Lee (2007) (44) & O'Sullivan (2007) (31) & Jhamb . (2009) (55) & Heiwe (2003) (45) & Brunier (1993) (46) & McCann (2000) (56) and Kazemi (2011) (57) who reported that there was negative correlation between fatigue and daily living activities.

IV. Conclusion

Based on the finding of the present study, it can concluded that there was a significant negative correlation was found between degree of fatigue and degree of daily living activities which means that when the fatigue increases the daily living activities decreases and when the fatigue decreases the daily living activities increases. So the fatigue affect on daily living activities for adult undergoing hemodialysis.

V. Recommendation

- All hemodialysis patients mustn't ignoring sense of fatigue and its associated symptoms.
- All hemodialysis patients must avoid factors that increase fatigue and follows measures to reduce fatigue and enhance performing daily living activities as measures to conserve patients energy, enhance nutrition and sleep , measures to avoid anemia, and how to overcome overexertion.
- Further studies are needed to evaluate the effect of fatigue on daily living activities for patients undergoing hemodialysis by using other scales for measuring fatigue and daily living activities using large sample from different hospitals.

References

- [1]. Sharaf A. Assessment of nursing interventions for intradialytic problems of patients on maintenance haemodialysis. Published Master Thesis faculty of Nursing, University of Alexandria 2000.
- [2]. Taneva S , selim G , Stojkovski I , Ivanovski N . Hypertension and progression of nephropathy in diabetic and non diabetic chronic kidney disease patients . Hippokratia Quarterly Medical Journal 2007;11(2):72-6.
- [3]. Abdel Razik A. Assessment of Nursing Care Providing For Children Undergoing Haemodialysis . Published Master Thesis. Faculty of Nursing ,University of Alexandria . 2007.
- [4]. The sixth Annual Report of End Stage Renal Disease from united . states renal data systemNational Institutes Of Kidney Diseases.
- [5]. Statistical record of the Mubarak hospital at Tanta University 2006-2011.
- [6]. Walsh M . Clinical Nursing and Related Sciences . 6 th ed. Philadelphia : WB Saunders Co ., 2002 ; 627 -8,633-6.
- [7]. Abbasi M, Chertow G, Hall Y. End stage renal disease. Clinical Evidence:2010,Available at: http://clinical.evidence.Bmj.Com/ceweb/conditions/knd/2002/2002_background.jsb. Retrieved on :2\3\2010.
- [8]. Heidelbaugh JJ . Clinical men's health : evidence in practice . Philadelphia: Saunders Elsevier Co., 2008 ; 208 .
- [9]. Bunker C, Kowalskr M . Text book of basic Nursing . 9 th ed . Philadelphia ; Wolters Kluwer health \ Lippincott Williams & Wilkins Co., 2008 ; 1393 .
- [10]. Dow P . Stressors associated with end renal disease and renal dialysis : available at : // www . njcu . edu / Programs / academic forum /82 / stressors associated . html . Ratrieved on : 1/7/2009 .
- [11]. Hoppler P and Williams L . Understanding Medical Surgical Nursing , 2nd ed . Philadelphia , Davis Co., 2008;220-227.
- [12]. Chang W, Hung K, Huang J, Wu K, Tsai T. Chronic fatigue in long-term peritoneal dialysis patients. Am J Nephrol. 2001;21(6):479-485.
- [13]. Murtagh F, Addington-Hall J, Higginson I. The prevalence of symptoms in end-stage renal disease: A systematic review. Adv Chronic Kidney Dis. 2007;14(1):82-99.
- [14]. Unruh M, Benz R, Greene T. Effects of hemodialysis dose and membrane flux on health-related quality of life in the HEMO Study. Kidney Int. 2004;66(1):355-366.
- [15]. Weisbord S, Fried L, Arnold R. Prevalence, severity, and importance of physical and emotional symptoms in chronic hemodialysis patients. J Am Soc Nephrol. 2005;16(8):2487-2494.
- [16]. Tack B . Self - reported fatigue in rheumatoid arthritis - a pilot study . Care Res . 1999; 3 (3) : 154-157 .
- [17]. Eman M . psychiatric morbidity among non organic fatigue patient. Published Master Thesis . faculty of medicine . University of Ain shams .2010.

- [18]. Bonner A, Wellard S. & Caltabiano M. The impact of fatigue on daily activity in people with chronic kidney disease. *J Clin Nurs*, 19 ;2010.
- [19]. Hubscky E and Sears J. Fatigue in multiple sclerosis : Guidelines for nursing care . *Rehabil . Nurs* .2000; 17: 176-181.
- [20]. Jenson S and Given B . Fatigue affecting family care givers of cancer patients . *Cancer Nurs* . 2002 ; 14: 181-187.
- [21]. Winningham M Nail L , Barton – Burke M , Brophy L Cimprich B , Jones L , Pickard- holley S and others . Fatigue and the cancer experience : The state of the knowledge . *Oncol . Nurs . Forum* . 2007 ; 21:23-36.
- [22]. Belza Tack B Fatigue in rheumatoid arthritis . *Arthr . Care Res* . 2000; 3 (2) : 65-70.
- [23]. Gift A and Pugh L . Dyspnea and fatigue . *Nurs . Clin . N Am* . 2010 ; 28: 373-384.
- [24]. Schaefer K and shober Potylycki M . Fatigue associated with congestive heart failure : Use of leavens conservation model . *J . Adv . Nurs* . 2005; 18:260-268 .
- [25]. Weisbord S, Fried L, Mor M. Renal provider recognition of symptoms in patients on maintenance hemodialysis. *Clin J Am Soc Nephrol* . 2007; 15(5): 220-225.
- [26]. Lindsay R, Heidenheim P, Nesrallah G, Garg A, Suri R. simple health-related quality of life. *Clin J Am Soc Nephrol* . 2006: 15 (5) :20-30.
- [27]. Piper B, Lindsey A, Dodd M, Ferketich S, Paul S & Weller S. The development of an instrument to measure the subjective dimension of fatigue. 4th ed. Pakistan : Boston, Little Brown Co,1989; 230 – 237.
- [28]. Chandna S, Schulz J, Lawrence C, Greenwood R, Farrington K: Is there a rationale for rationing chronic dialysis? A hospital based cohort study of factors affecting survival and morbidity. *BMJ* 318: 217–223, 1999.
- [29]. Liu H. Fatigue and associated factors in hemodialysis patients in Taiwan. *Research in Nursing and Health*, 29(1), 2006 ; 40-50.
- [30]. Morsch C, Goncalves L & Barros E . Health-related quality of life among hemodialysis patients--relationship with clinical indicators, morbidity and mortality. *Journal of Clinical Nursing*, 15(4), 2006; 498-504.
- [31]. O'Sullivan D& McCarthy G. An exploration of the relationship between fatigue and physical functioning in patients with end stage renal disease receiving hemodialysis. *Journal of Clinical Nursing*, 16(11C), 2007; 276-284.
- [32]. Dawood E. Relationship between the stressors , coping mechanism and the recived quality of life among hemodialysis patients in Shebin El- kom university hospital. Master thesis . 1999.
- [33]. Kamal A. Quality of life of patients with end stage renal disease. Published Master Thesis faculty of Nursing. University of Ain shams 2001.
- [34]. Jhamb M, Pike F, Ramer S, Argyropoulos C, Steel J, Dew M. Impact of Fatigue on Outcomes in the Hemodialysis (HEMO) Study. *American Journal of Nephrology*, 33(6), 2011; 515-523.
- [35]. Bossola M, Luciani G & Tazza L. Fatigue and its correlates in chronic hemodialysis patients. *Blood Purification*, 28(3), 2009; 245-252.
- [36]. Koyama H, Fukuda S, Shoji T, Inaba M, Tsujimoto Y, Tabata T. Fatigue is a predictor for cardiovascular outcomes in patients undergoing hemodialysis. *Clinical Journal of the American Society of Nephrology*, 5(4), 2010; 659- 666.
- [37]. Letchmi S , Das S, Halim H, Zakariah F, Hassan H, Mat S. Fatigue experienced by patients receiving maintenance dialysis in hemodialysis units. *Nurs Health Science*, 13(1), 2011; 60-64.
- [38]. Dochi M, Suwazono Y, Oishi M, Sakata K, Kobayashi E, Nogawa K. Behav M. Relation between fatigue and marital status . 2007
- [39]. Kim H & Son G. Fatigue and its related factors in Korean patients on hemodialysis. *Taehan Kanho Hakhoe Chi*, 35(4), 2005; 701-708.
- [40]. Clark E. Chronic Fatigue Syndrome. *Young adult health*. 2002.
- [41]. Mizuno K, Tanaka M, Foukuda S, Imai- mastumora K, Watanabe Y. Relationship between cognitive functions and prevalence of fatigue in elementary and junior high school students.2011.
- [42]. Santhna L. Fatigue experienced by patients receiving maintenance dialysis in hemodialysis units. 2011.
- [43]. Jhamb M, Weisbord S, Steel J & Unruh M. Fatigue in patients receiving maintenance dialysis: a review of definitions, measures, and contributing factors. *American Journal of Kidney Diseases*, 52(2), 2008; 353-365.
- [44]. Lee L, Chaboyer C & Hung. The fatigue experience of hemodialysis patients in Taiwan. *Journal of Clinical Nursing*, 16(2), 2007;407-413.
- [45]. Heiwe S, Clyne N & Dahlgren M. Living with chronic renal failure: patients' experiences of their physical and functional capacity. *Physiotherapy Research Internationa*, 8(4), 2003; 167-177.
- [46]. Brunier G & Graydon J. The influence of physical activity on fatigue in patients with ESRD on hemodialysis. *Nephrology Nursing Journal*, 20(4), 1993; 457- 461; discussion 462, 521.
- [47]. Sklar A, Riesenber L, Silber A, Ahmed W and Ali A. Post-dialysis fatigue. *American Journal of Kidney Disease*, 28(5), 1996; 732-736.
- [48]. Niels H, Johan H and Per B . Assessment of fatigue in chronic disease: a bibliographic study of fatigue measurement scales.2007.
- [49]. Hye-Ryoung K, Gwi-Ryung S. Fatigue and Its Related Factors in Korean Patients on Hemodialysis. *Journal of Korean Academy of Nursing* 2005. 35, No. 4, 701- 708.
- [50]. Lok P. stressor , coping mechanism and quality of life among dialysis patients in Australia. *Journal of Advanced Nursing*, (23), 1996: 873-881.
- [51]. Ferrans C and power M. Quality of Life of Hemodialysis patients. *ANNA Journal*, Vol. (20), No.(5), 1993: 575-581.
- [52]. Mokabel F. The Quality of life of women with End- Stage Renal Disease in Egypt. Published in The 7th ed., International scientific conference Toward The Advancement of The Nursing Profession in The Third Millennium. 2000.
- [53]. Evans, R.W.; Manninen, L ; Garrison, L.P.; Hart , L.G.; Blagg, C.R. and Gutman , L.C. (1985): The Quality of Life of Patients with end stage renal disease. *New England Journal of medicine*; Vol.(12), No.(9), PP. 553-559.
- [54]. Carlson D, Jahnsn W and Kjellstrand C .Functional status of patients with End- stage Renal Disease . *Mayo. Clin. Proc.*, (62), 1987: 338- 344.
- [55]. Jhamb M, Argyropoulos C, Steel J, Plantinga L, Wu A, Fink N. Correlates and Outcomes of Fatigue among Incident Dialysis Patients. *Clinical Journal of the American Society of Nephrology*. 2009.
- [56]. McCann K & Boore J. Fatigue in persons with renal failure who require maintenance haemodialysis. *Journal of Advanced Nursing*, 32(5), 2000; 1132-1142.
- [57]. Kazemi M, Nasrabadi A, Hasanpour M, Hassankhani H & Mills J. Experience of Iranian persons receiving hemodialysis: a descriptive, exploratory study.