

# Quality Of Life For Hemodialysis Patients In Kirkuk Governorate / Iraq

## نوعية الحياة بين مرضى الديليزة الدموية في مدينة كركوك/ العراق

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### الخلاصة

**الاهداف:** تهدف الدراسة الى تقييم نوعية الحياة بين مرضى غسل الكلية وكذلك معرفة العلاقات بين محاور نوعية الحياة. **المنهجية:** تم إجراء هذه الدراسة الوصفية في مستشفى كركوك العام في مدينة كركوك، للفترة من الخامس عشر من أيلول ٢٠١١ إلى العشر من آب ٢٠١٢. وتكونت العينة العמודية من (٩٤) مريض من مرضى العجز الكلوي النهائي الذين يعالجون بالغسل الكلوي الدموي ولجميع بيانات الدراسة فقد بُني الاستبيان معتمداً على الأداة المعتمدة من منظمة الصحة العالمية وعلى مراجعة المصادر المتعلقة بالموضوع يتألف الاستبيان من جزئين: تضمن الجزء الأول (٩) فقرات شملت الصفات الديموغرافية لمرضى الغسل الكلوي وتضمن الجزء الثاني (٥) فقرات رئيسية شملت المؤشرات الجسمية، الاجتماعية، النفسية، الاستقلالية والروحية ضمن نوعية الحياة، وكان مجموع الفقرات (١٠٩) فقرة، استخدم مقياس ليكرت المتكون من ثلاثة اختيارات في تقدير الإجابات: (دائماً= ٢)، (أحياناً= ١) و (أبداً= صفر)، وتم تحديد مصداقية المحتوى من خلال عرض الاستبيان على مجموعة من الخبراء تتألف من (١٦) خبير. وقد تم تقييم الثبات الداخلي للاستبيان بواسطة حساب معامل الارتباط كرونباخ ( $r=0.81$ ) من خلال إعادة الاختبار على (١٠) مرضى. **النتائج:** أشارت نتائج الدراسة إلى أن مؤشرات النوم والراحة كجزء من المؤشر الجسدي وكذلك المؤشر النفسي ضمن مجالات نوعية الحياة قد تأثرت كثيراً.

**الاستنتاج:** أثبتت الدراسة وجود علاقات متبادلة إحصائية معنوية بين المؤشرين الجسدي والنفسي وبين المؤشرين الروحي والاجتماعي.

**التوصيات:** وتوصي الدراسة بتعزيز الدعم الاجتماعي والمجتمعي للمرضى وكذلك تقبلهم، إضافة إلى زيادة عدد المؤسسات الصحية المتخصصة ذات العلاقة وكذلك وحدات الغسل الكلوي.

**الكلمات المفتاحية:** نوعية الحياة، مريض الديليزة الدموية

### Abstract

**Objectives:** to assess Quality of Life (QoL) for dialysis patients and to predict the correlations among the domains of quality of life.

**Methods:** A descriptive study was conducted in Kirkuk General Hospital in Kirkuk city. The study was initiated from 15<sup>th</sup> September 2011 to the 20<sup>th</sup> August 2012. Purposive sample consists of (94) patients with end-stage renal disease treated by Haemodialysis were selected. In order to collect the study data, such questionnaire was constructed based on World Health Organization (WHO) instrument and literature reviews. It is composed of two parts, part one included (9) items that focused on the client demographic characteristics. Part two is composed of (5) items that covered physical, social, psychological, level of independence and spiritual domains of quality of life. The overall questions included (109) items, 3-likert scale option was used in the rating scale as: (2) for Always, (1) for Sometimes and (0) for Never. Content validity was determined by presenting the questionnaire to a panel of (16) experts. Reliability of the instrument was determined through Internal consistency of the questionnaire that was assessed by calculating Cronbach's Coefficient ( $r= 0.81$ ) through test – retest on (10) patients for fourteen days in-between.

**Results:** The findings indicated that the sub-domain of sleep and rest as a part of the physical domain, also the psychological domain of the quality of life for these patients had greatly affected.

**Conclusion:** The study concluded that there were significant statistical interrelations between physical and psychological domains in addition to spiritual with social domain.

**Recommendation:** The study recommends to increase the number of specialized health related agencies and dialysis units to enhance the quality of life for hemodialysis patients.

**Keywords; Quality of Life, Haemodialysis patients.**

### INTRODUCTION:

Chronic Kidney Disease (CKD) is a serious public health problem associated with increasing prevalence rates, rising healthcare costs, and high rates of mortality

from co-morbid conditions <sup>(1)</sup>. In the fifteen years between 2001 and 2016, there would be an over 50% increase in the number of people aged sixty-five years or older, and an almost 20% increase in those between forty- five and sixty-four years. These changes in demographics and the resulting aging population with underlying chronic diseases associated with End Stage of Renal Disease (ESRD) need to be considered when anticipating the needs for renal services <sup>(2)</sup>.

Dialysis is an imperfect treatment to replace kidney function because it does not correct the endocrine functions of the kidney. Dialysis treatments replace some of these functions through diffusion (waste removal) and ultra filtration (fluid Removal)<sup>(3)</sup>. Hemodialysis (HD) or peritoneal dialysis (PD) can be used to replace some of the function of the non-working kidneys. In 2007, the most common form of Renal Replacement Therapy (RRT) was HD (49%, n=17,231), followed by 40% (14,146) living with a functioning kidney transplant and 3,888 (11%) being treated with PD <sup>(4)</sup>.

Quality of life in dialysis patients is dramatically lower than that of the general population. HD and PD patients differ in age (HD patients are older) but also is perceived well-being: the physical quality of life over time is better in HD patients compared to PD patients <sup>(5)</sup>. Quality of life (QoL) issues are now recognized as important outcome measures in health care, cost-effective analyses of the efficacy of medical care and clinical trials, and therapeutic interventions for chronic conditions, including end-stage renal disease (ESRD). QoL consider such factor in the decision-making process for dialysis treatment selection<sup>(6)</sup>. The Objectives of the Study were to assess the quality of life among dialysis patients according to; Physical, Social, Psychological, Independence and spiritual domains, and to predict the effect of each domain of quality of life on other domains.

## **ETHODOLOGY:**

To achieve the objectives of the study a descriptive design was applied in the present study from 15<sup>th</sup> September 2011 to the 20<sup>th</sup> august 2012. The study was conducted in Kirkuk General Hospital (in the only special unit for dialysis in Kirkuk Governorate). The staff of unit were; two medical specialists in nephrology and seventeen nurses "eleven males and six females". This unit had four shifts, four hours for each, starting from 9:00 AM to 11:00 PM. A Purposive sample consisted of (94) patients, (48) male and (46) female chooses according to the following criteria:-

- 1- Age ranges between (10 - 60) years and more.
- 2- Peritoneal dialysis patients were excluded from the present study, for, they were very few patients.

Each patient visited the clinic was examined by the specialist, while, complete physical examination was carried out, the patient were sent for ultra-sound and for laboratory investigations (BUN level, S. creatinine level, hemoglobin level, S. calcium level). Eventually, and depending on physical examination, radiological pictures and laboratory investigations, if the patient was diagnosed as ESRD, they participated in the study (after gaining their approval).

In order to collect the study information, a questionnaire was constructed based on the criteria of WHO scale <sup>(7)</sup> – a format adopted and modified by researcher- and related literatures. It composed of two parts :-

- 1- Part I:-** This part included (9) items focusing on the client socio-demographic characteristics such as (Age, Gender, Residence, Marital status, Occupation,

Level of education, Concomitant with chronic disease, Duration of haemodialysis and Number of haemodialysis) .

**2- Part II:-** It consists of (5) domains and (15) sub-domains. The domains and sub-domains were:

**A- Physical domains:**

**B- Social domains:**

**C- Psychological domains:**

**D-Level of Independence domains:**

**E- Spiritual domain:**

The overall items were (109) item, 3-likert scale option was used in the rating scale as: (2) for Always, (1) for Sometimes and (0) for Never.

A pilot study was conducted for the determination of the validity and reliability of the questionnaire. The study was carried out for the period (12<sup>th</sup> January 2012 till the 15<sup>th</sup> February 2012). Content validity was determined by presenting the questionnaire to a panel of (16) experts in different specialties : four in community health nursing, four in adult health nursing, one in orthopedics and fracture surgeries, one in nutrition, two psychologists, three doctorate in medicine and one in statistics. Those experts were asked to review the questionnaire for content clarity, relevancy, and adequacy. Their responses indicated that minor changes should be performed on few items. All modifications were undertaken relative to their recommendations, and, in order to identify the reliability of the tool, it was applied to (10) patients with end-stage renal disease treated by haemodialysis who were selected randomly from Kirkuk general Hospital. Then two weeks later, they were re-tested, whereas this sample excluded from the final sample of the study. The results of two checking (test and re-test) were analyzed to find out the reliability by calculating Cronbach's Coefficient Correlation. It was (0.81).

Data were collected through the interview technique. Each patient spends approximately (25 – 30 min) to respond to the interview. The data were collected throughout the period of 1<sup>st</sup> March 2012 to the 25<sup>th</sup> May 2012. Data were organized and coded into the computer files; Statistical Package for Social Science (SPSS) version (11.5) that was used for data analysis while the significance level depended was (P. value < 0.05). Descriptive statistical methods (Frequency, Mean, Standard deviation and Confidence Interval) in addition to the theoretical means of each sub-domain and for the total domains by summation of all items if they were never with them if they were always, then dividing the summation results on the number of options, and Inferential statistical methods (Paired t-test, and Pearson Correlation were used to analyzed the data.

## RESULTS:

**Table (1): Distribution of the Socio-Demographic Characteristic of the Study Sample (No=94 ).**

	Variables	Frequency	percentage
Age /years	10-19	5	5.3
	20-29	12	12.8
	30-39	6	6.4
	40-49	17	18.1
	50-59	24	25.5
	> 60	30	31.9
Gender	Male	48	51.1
	Female	46	48.9
Marital status	Single	17	18.1
	Married	59	62.8
	Divorced	3	3.2
	Widowed	15	16.0
Level of education	Unable to read and write	50	53.2
	Read and write	16	17.0
	Primary school graduate	12	12.8
	Intermediate school graduate	7	7.4
	Secondary school graduate	4	4.3
	Institution graduate	2	2.1
	College graduate	3	3.2
Occupation	Retired	8	8.5
	Civil work	11	11.7
	Functionless	20	21.3
	Housewife	43	45.7
	Employed	5	5.3
	other	7	7.4
	More than two	31	33.0
Period of hemodialysis	< 1 year	58	61.7
	1-2 years	17	18.1
	2-3 years	12	12.8
	> 3 years	6	6.4
	Other (Long time of > 5 years)	1	1.1

Table (1) shows that the highest percentage of age groups is between (60 years and more) that constituted (31.9%), and according to gender, the high percent was of males and constituted of (51.1%). Most of patients were married which constituted (62.8% ), (53.2 %) of the sample were unable to read and write, with regard to occupation (45.7 %) patients were housewife. With respect to the duration of haemodialysis , most of the sample (61.7%) had a period of haemodialysis (<1) year, Finally , in respect to the number scheduled of haemodialysis, the majority of the sample (79.8%) were scheduled for haemodialysis twice per week.

**Table (2): Relationship between Actual and Theoretical Means regarding Domains of Quality of Life by using t-test**

Categories	Mean Difference	Std. Deviation	95% of C.I.		t	df	Sig.
			Lower	Upper			
Pain and discomfort	-1.9149	3.40985	-.26133	-1.265	-5.445	93	.000
Energy and fatigue	-.1075	1.72237	-.4622	.2372	-.602	92	.549
Sleep and rest	-.319	1.36352	-.3112	.2474	-.227	93	.821
Total Physical domain	-2.0319	4.59652	-2.9734	-1.0905	-4.286	93	.000
Personal relationship	.1383	1.85844	-.2423	.5189	.721	93	.472
Recreation	-.5957	1.40903	-.8843	-.3071	-4.099	93	.000
Social domain	-.4574	2.03552	-.8744	-.0405	-2.179	93	.032
Appearance and body image	-1.1383	1.46354	-1.4381	-.8385	-7.541	93	.000
Self-respect	-1.0426	1.21739	-1.2919	-.7932	-8.303	93	.000
Thought and negative feeling	-1.1489	3.93484	-1.9549	-.3430	-2.831	93	.006
Concentration, memory and learning	2.0957	1.55245	1.7778	2.4137	13.088	93	.000
Total Psychological domain	-1.2340	4.49474	-2.1547	-.3134	-2.662	93	.009
Mobility	-1.7234	3.52992	-2.4464	-1.0004	-4.734	93	.000
Activities of Daily Life	-.3191	1.51134	-.6287	-.0096	-2.047	93	.043
Medications	3.0523	1.66796	2.7116	3.3948	17.747	93	.000
Nutrition	1.4149	1.64878	1.0772	1.7526	8.320	93	.000
Environment	2.7447	1.71606	2.3932	3.0962	15.507	93	.000
Accomplishment of duties	-2.4043	1.71219	-2.7544	-2.0536	-13.614	93	.000
Total Level of Independence domain	2.6170	5.48332	1.4443	3.7401	4.627	93	.000
Total Spiritual domain	2.6702	2.3483	2.1893	3.1512	11.025	93	.000

Table (2) demonstrates that almost domains and sub-domains have significant statistical differences in respect to relationship between actual and theoretical means of them excepts energy, sleep and Personal relationship sub-domains with others.

**Table (3): Correlations among Domains of Quality of Life by using Pearson Correlation Test**

Domains	Physical	Social	Social	Independence	Spiritual
Physical Domain Pearson Correlation Sig.	1 0				
Social Domain Pearson Correlation Sig.	- 0.131 0.207	1 0			
Social Domain Pearson Correlation Sig.	0.334 ** 0.001	0.92 0.38	1 0		
Independence Domain Pearson Correlation Sig.	0.14 0.177	- 0.087 0.404	0.175 0.092	1 0	
Spiritual Domain Pearson Correlation Sig.	- 0.09 0.39	0.249 * 0.01	0.033 0.75	- 0.012 0.905	1 0

\*\* Correlation is significant at the 0.01 level.

\* Correlation is significant at the 0.05 level.

Table (3) depicts that there were significant statistical correlation between Physical and Social domains, also between Social and Spiritual domains.

## DISCUSSION;

Results of the present study as in (Table-1) indicated that the age group of (60 years and more) constituted the highest percentage as (31.9%) of the total sample. Our finding disagrees with (SCOT, 2002) who indicated that one third of HD patients were within 26-45 years old<sup>(8)</sup>, whereas, Nagata et al (2010) found that in Japan the prevalence of chronic kidney disease increased significantly in men not in women<sup>(9)</sup>. In the other hand, the result of present study disagrees with Anderson et al (2008) who reported that dialysis was more common in females than males (10). More than sixty percent (62.8%) of the total sample were married, this was supported by Diepenbrock (2004), he found that out of 140 dialysis patients in Kelantan, 78.1% were married<sup>(11)</sup>, also, Rima (2006) found that 61.2% of dialysis patients in KSA were married. More than half of dialysis patients were unable to read and write and constituted (53.2 %) from the total sample<sup>(12)</sup>. Around half of patients (45.7 %) of the total sample were housewives, Rima (2006) agreed with our finding, for, she found that housewives constituted (44%) in Saudi Arabia, whereas<sup>(12)</sup>, AL-Jumaih et al (2011) mentioned that 43% of patients were retired<sup>(13)</sup>. and Chen et al (2003) found that 3/4 of their study sample didn't work<sup>(14)</sup>. One-Third of dialysis patients suffered from more than two chronic diseases (Diabetes Mellitus, Hypertension, and Atherosclerosis), this was supported by previous studies conducted in USA ,Caribbean, Iran, Saudi Arabia, Egypt, Jordan, Palestine showed that hypertension and diabetes mellitus were the most common causes of ESRD<sup>(15,16)</sup>. More than half (61.7%) from the total sample were on haemodialysis for less than one year. AL-Jumaih et al (2011) found that the duration on dialysis was five years among their patients, whereas<sup>(13)</sup>. Finally, majority of patients were on dialysis twice weekly and constituted (79.8%) of the total sample. Rima (2006) indicated that (85.1%) of haemodialysis patients were on dialysis three sessions weekly<sup>(12)</sup>.

Table (2) demonstrates highly significant differences for all main domains and almost sub-domains except 'Energy and Sleep sub-domains from Physical domain, in addition to Personal relationship with others sub-domain from Social domain'. Also the table indicates two directional relationships, **First**; Negative Significant Statistical Relationship, for: Pain, Recreation, Appearance, Self-respect, Negativism, Mobility, Activities of Daily Life (ADL) and Duties accomplishment as sub-domains, in addition to Total Physical, Total Social and Total Psychological domains. This can be explained, for, the means differences of these mentioned sub-domains and domains were negative which means that our dialysis patients enjoyed, in respect to those aspects of life, worse than what the disease can left behind, while, this result appeared to be a disturbing phenomenon. **Second**; Positive Significant Statistical Relationships, for: Concentration, Medication, Nutrition and Environment as sub-domains, Total Independence, as well as Spiritual domains, for, the means differences of those mentioned aspects of life were positive which means that our dialysis patients, in respect to those aspects of life, enjoyed better than what the disease may left behind, while, this result seemed cheerful phenomenon. It was found in a previous study, that two third of the dialysis patients experienced pain which was considered as the highest physical complaint. Sleeping disturbance is common in HD patients, for, ESRD has long been associated with sleep complaints, especially patients undergoing dialysis. Problems falling asleep or staying asleep, frequent awakenings, daytime fatigue, and unplanned naps are frequently reported by dialysis patients<sup>(8)</sup>. A study conducted in Turkey found that two third of ESRD patients had depression and found an association between depressed mood and health-related QoL<sup>(9)</sup>. Another study indicated that the mental health was significantly higher for dialysis patients treated in

the United States than in Europe <sup>(10)</sup>, presence of differences in several physical and mental component scores between Japanese patients and those from Europe and America <sup>(11)</sup>. Decreased physical activity among patients on dialysis could be a consequence of uremia, but the lack of a significant association between activity level and uremia alone makes it of less likely explanation. However, patients may reduce their levels of physical activity during the pre-ESRD phase of renal failure because of the effects of uremia on muscle function and fatigue and may not increase activity back to baseline levels after dialysis is initiated. Alternatively, the dialysis procedure itself could contribute to low levels of physical activity since many patients complain of fatigue following dialysis sessions <sup>(12)</sup>. Poor nutrition is a predictor of poor outcome at the start of dialysis. Patients spontaneously reduce their protein intake as well as their overall calorie intake, and some become severely cachectic. Restrictive diets, persistent heavy proteinuria, co-existing disease, and increasing age are all risk factors for malnutrition <sup>(13)</sup>. Among one hundred chronic HD patients from King Abdulaziz Medical City, Riyadh, it was found that domains with very low scores of quality of life were "cognitive function", "role-emotional", "role-physical" and "work status". Domains with high scores were "patient satisfaction", "dialysis staff encouragement," and "quality of social interaction". Levy et al (2010) indicated that patients receiving haemodialysis as treatment for ESRD have a fair perception of their quality of life <sup>(17)</sup>.

In order to predict the Correlations among domains of quality of life among dialysis patients (Objective-Two), Pearson correlation was used. Table (3) demonstrates significant statistical correlations between Physical and Psychological domains. ESRD causes major alterations in the lifestyle of most patients, as, frustration in all areas of life, this frustration causes depression which is known to be strongly associated to decreased health-related QoL <sup>(14)</sup>. This is a natural consequences of the disease, but whenever, the physical complaints decrease in intensity, so, the psychological status of the patient will got better, and vice versa. Also the table presents significant statistical correlations between Social and Spiritual domains. Spirituality and spiritual obligations impose on every one social obligation as sharing others in their happiness, weddings, also their tragedy and catastrophic or gloomy life events, and vice versa.

## **CONCLUSIONS:**

The study concluded that almost actual domains and sub-domains of quality of life had significant associations positively or negatively with what the disease may left behind, there were significant statistical associations between Physical and Psychological domains, also between Spiritual and Social domains, there were many positive associations among some domains; (physical - Psychological),(Physical – Independence) ,(Psychological - Social) ;(Independence-Psychological) ,(Spiritual-Psychological) and (Spiritual - Social) domains, and there were many negative associations among some domains; (Physical - Social), (Physical - Spiritual), (Independence - Social) and (Independence - Spiritual).

## **RECOMMENDATIONS:**

1. Instruct patients to use the amusement methods to enhance sleep, reduce pain, ameliorate physical health status, and improve the psychological health status.
2. Emphasis on group therapy among patients.
3. Emphasis on spiritual therapy among patients.

5. Increase the number of specialized health-related agencies and dialysis unit.
6. Emphasis on health related agencies to provide extreme level of services.

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