

# Quality of Life of Chronic Kidney Disease Patients in a Nigerian Teaching Hospital

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## Abstract

Studies assessing the quality of life of chronic kidney disease patients prior to initiating dialysis therapy are much fewer than studies of patients on dialysis. However many of the factors affecting quality of life during dialysis already exist in the early stage of chronic kidney disease and suitable management of these factors could have a positive influence on the course of the illness. This is a cross-sectional study assessing the relationship between sociodemographic and medical factors with the quality of life of chronic kidney disease patients. The study comprises of 113 consecutive adult chronic kidney disease patients attending the renal clinic of the university of Ilorin teaching hospital, Ilorin, Nigeria. Health related quality of life was assessed using the 26 item World Health Organization quality of life instrument (WHOQOL-BREF). Age greater than 60 years ( $p=0.001$ ), receiving adequate social support ( $p=0.038$ ) were statistically significantly associated with higher score on Environment domain of WHOQOL-BREF, while being divorced ( $p=0.005$ ) was significantly related to a lower score (i.e. poorer QOL) on this domain. Among the clinical characteristics, being at an advanced stage of CKD and being on current treatment with RRT were statistically significantly associated with lower scores on overall QOL ( $p=0.017$ ;  $p=0.045$  respectively). These two clinical characteristics were also associated with lower scores (i.e. poorer QOL) on the physical health ( $p=0.007$ ;  $p<0.001$  respectively), psychological health domain ( $p=0.04$ ;  $p=0.01$  respectively) and environment domain ( $p=0.035$ ;  $p=0.018$  respectively) of the WHOQOL-BREF. Both the presence of complication and using higher number of medications were statistically significantly associated with lower scores on health satisfaction ( $p=0.026$ ;  $p=0.01$  respectively) and the physical health domain ( $p=0.006$ ;  $p<0.001$  respectively) of WHOQOL-BREF. Sociodemographic and clinical factors influence the quality of life of chronic kidney disease patients. However, efforts made at early detection and treatment with provision of social assistance may help reduce their negative effects on the quality of life of these patients.

**Keywords:** quality of life; chronic kidney disease; Nigeria

## 1. Introduction

Chronic kidney disease (CKD) is a progressive, life threatening illness which is increasingly being recognized as a global public health problem (Bosan, 2006; McClellan et al. 2003). This damage to the kidney is irreversible and progression to end stage renal disease is inevitable, thus most CKD patients will eventually need a form of renal replacement therapy (RRT) (Bosan, 2006; Alebiosu and Ayodele 2005; McClellan et al. 2003; Karl et al. 2001).

Major advancements in medicine such as the use of RRT in CKD patients, has been able to improve outcome of this chronic illness but therapy has the drawback of focusing more on symptom reduction while neglecting the patient as a person (Basu, 2004). As a result, while many of the patients with chronic kidney disease now live longer than they would have lived in the presence of the illness, paradoxically a significant proportion of these same patients might feel that these added years were not really worth living (Makanjuola et al. 2007; Basu, 2004). Thus, quality of life (QOL) issues have become steadily more important in health care practice in order to emphasize a holistic (biopsychosocial) approach to care and in keeping with World Health Organization definition of health as being not only the absence of disease and infirmity but also the presence of physical, mental and social wellbeing (Tester and Simonson 1996).

Over the decades, studies have assessed health related quality of life (HRQOL) in different CKD populations (Knight et al. 2003). These studies have revealed that numerous sociodemographic, clinical and psychosocial factors are associated with reduced quality of life of CKD patients (Musci, 2008). The HRQOL areas of difficulty most frequently cited for CKD include pain, sleep disturbance, reduced global perception of general health and a variety of other symptoms commonly noted in end stage renal disease (ESRD) patients, such as muscle weakness, restless legs, and post-dialytic fatigue (Finkelstein et al. 2009).

Currently, there is a dearth of studies assessing QOL in CKD patients in Nigeria. This has prompted the present study which aims at determining the effects of sociodemographic and clinical characteristics of chronic kidney disease patients on their quality of life.

## 2. Methodology

### *Study Setting*

The cross-sectional study was carried out at the University of Ilorin Teaching Hospital (UIITH), Ilorin between April-June 2011. Ilorin, the capital of Kwara state is located in the North central zone of Nigeria. It is a predominantly Yoruba city situated 261km inland from the coastal city of Lagos, Nigeria (Tiptop Globe, 2011). UIITH is a tertiary health facility that serves the people of Kwara state and also the neighbouring states of Oyo, Osun, Kogi, Niger and Ondo. The study was carried out at the renal clinic of the Hospital. This is a clinic run by 3 Consultant Nephrologists and Resident Doctors every Tuesday of the week. Both old and new cases are seen on each clinic day.

### *2.1 Subjects*

All consenting consecutive adult patients with diagnosis of CKD attending renal clinic in the hospital constituted the study population. The presence of CKD in the patients must have been diagnosed by the consultants in charge of the renal clinic and must meet the definitions for CKD i.e. kidney damage for greater than or equal to 3months and /or glomerular filtration rate (GFR) less than 60mls/min/1.73m<sup>2</sup> for greater than or equal to 3months with or without kidney damage (Alebiosu and Ayodele 2005; KDOQI, 2002; Karl et al. 2001). Patients who were too ill to participate were excluded from the study.

### *2.2 Procedure*

Approval to carry out the study was obtained from the Ethics and Research Committee of University of Ilorin Teaching Hospital. Permission to study the patients was also obtained from the consultants in charge of the renal clinic. The study sample size of 113 was obtained using the Fisher's formula. The informed consent of each respondent was sought and only those who gave consent were recruited into the study. All consecutive eligible participants at the renal clinic were included until the estimated sample size of 113 participants was achieved. A proforma questionnaire was administered by the research assistant to all eligible participants who gave their informed consent. This questionnaire was used to obtain socio-demographic data e.g. age, sex, marital status, religion, occupation etc. The occupations of the patients were classified according to the revised International Standard Classification of Occupation (ISCO-88) (ILO, 1990). Afterwards, patients' case-notes were examined to extract relevant data such as the predisposing disease conditions causing the CKD, latest creatinine level (this was used to estimate the glomerular filtration rate (GFR) of the patients using the Cockcroft-Gault formula), number of medications used by the patients, previous and current treatment with RRT and the complications arising from CKD. The WHOQOL-BREF (WHO, 1996) was used to assess the health related quality of life of respondents. This is a 26 item self administered questionnaire. However, the questions were read out to illiterate patients by a trained research assistant and their responses recorded. Each item of the WHOQOL-BREF has five options which the patient is expected to respond to on a 5-point Likert-type scale. The WHOQOL-BREF produces a quality of life profile with four domain scores. The four domains are 1. Physical Health 2. Psychological Health 3. Social Relationship 4. Environment . There are two items that are examined separately: Question 1 asks about an individual's overall perception of quality of life and question 2 asks about an individual's overall perception of their health. The physical health domain has 7 items; psychological health domain has 6 items; social relationship domain has 3 items while the environment domain contains 8 items. The four domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life). Three items: (items 3, 4 & 26) out of the 26 items are scaled in negative direction. The scores obtained on these items need to be recoded in order to transform them to positively framed questions. The range of raw scores that can be obtained on each domain are as follows; Domain 1: (7-35); Domain 2: (6-30); Domain 3: (3-15); Domain 4: (8-40). The raw scores obtained on each domain were transformed into scores in the range between 0-100, with higher scores indicating better QOL. The range of score that can be obtained from the 2 items examined separately (i.e item 1: overall quality of life and item 2: health satisfaction) is between 1-5, with higher scores indicating better QOL.

### 2.3 Statistical Analysis

Data from the study was analysed using EPI-INFO version 6.04d. Frequency tables were generated and means were compared using t-test. The level of statistical significant was set at 5% confidence limit for 2-tailed test.

## 3. Results

### *Sociodemographic Characteristics of Respondents with CKD*

The age range of the participants was between 19 and 85 years (mean 48.1±17.4). Fifty-eight (51.3%) of the respondents were males while fifty-five (48.7%) were females. Sixty three (55.8%) respondents felt they received adequate social support from their friends and relatives while 50 (44.2%) felt the support they received was not adequate (Table I).

**TABLE 1: SOCIODEMOGRAPHIC VARIABLES OF THE RESPONDENTS (N=113)**

VARIABLES	FREQUENCY n (%)
<b>Age Group</b>	
18-40	47(41.6)
41-60	37(32.7)
>60	29(25.7)
<b>Sex</b>	
Male	58(51.3)
Female	55(48.7)
<b>Religion</b>	
Christianity	49(43.4)
Islam	64(56.6)
<b>Marital Status</b>	
Single	30(26.5)
Married	75(66.4)
Divorced	1(0.9)
Widowed	7(6.2)
<b>Ethnicity</b>	
Yoruba	105(92.9)
Others	8(7.1)
<b>Employment</b>	
Employed	81(71.7)
Unemployed	32(28.3)
<b>Occupation<sup>a</sup></b>	
Legislators/Senior managers/Professionals	17(20.9)
Technicians/Clerks	20(24.7)
Service workers/Shop and Market workers	37(45.7)
Skill Agricultural/Fishery workers	5(6.2)
Armed forces	2(2.5)
<b>Educational Status</b>	
No education /Primary	46(40.7)
Secondary/Tertiary	67(59.3)
<b>Adequate Support</b>	
Yes	63(55.8)
No	50(44.2)

<sup>a</sup> - response rate for this item was 81

### 3.1 Clinical Characteristics of Respondents with CKD

Respondents in this study had been receiving treatment for several medical conditions prior to being diagnosed as cases of CKD. These medical conditions were presumed to be the causes of the CKD. Thirty-two (28.3%) had Hypertension prior to the diagnosis of CKD, 26 (23.0%) had Chronic Glomerulonephritis (CGN), 15 (13.3%) had both Hypertension and Diabetes Mellitus (DM), 19 (16.8%) had Nephrotic Syndrome, 3 (2.6%) had Metabolic Syndrome, while 6 (5.3%) had DM alone. Other diseases indentified amongst the study participants

included Chronic Pyelonephritis (1.8%), Adult Polycystic Kidney Disease (ADPKD) (1.8%), Sickle Cell Diseases (SCD) (0.9%), Systemic Lupus Erythromatosus (SLE) (0.9%), Obstructive Uropathy (2.7%), and Obstructive Nephropathy (0.9%). However, the cause of CKD was not known in 2 (1.8%) respondents.

Respondents were placed on a number of medications for treatment of the medical conditions causing CKD or the complications arising from it. Eighty-four (74.3%) were on “0-5” types of medication while 29 (25.7%) were on “6-10” types of medication. The estimated GFR values were used to stage the severity of CKD of the respondents. Twelve (10.6%) respondents had CKD stage 1, twenty-six (23.0%) had stage 2 CKD, 32 (28.3%) had CKD stage 3, fifteen (13.3%) had stage 4 CKD, while 28 (24.8%) had stage 5 CKD (Table II).

**TABLE 2: CLINICAL CHARACTERISTICS OF THE RESPONDENTS (N=113)**

VARIABLES	FREQUENCY n (%)
<b>Stages of CKD (GFR Values)</b>	
Stage 1 ( $\geq 90$ ) mls/min	12 (10.6)
Stage 2 (60-89) mls/min	26 (23.0)
Stage 3 (30-59) mls/min	32 (28.3)
Stage 4 (15-29) mls/min	15 (13.3)
Stage 5 (<15) mls/min	28 (24.8)
<b>Level of Severity of CKD</b>	
Early (stages 1 and 2)	38 (33.6)
Late /advanced (stages 3, 4 and 5)	75 (66.4)
<b>Number of Medication Prescribed</b>	
0-5	84 (74.3)
6-10	68 (25.7)
<b>Previous Treatment with RRT</b>	
Yes	9 (8.0)
No	104 (92.0)
<b>Current Treatment with RRT</b>	
Yes	7 (6.2)
No	106 (93.8)

**CKD-Chronic Kidney Disease; GFR- Glomerular Filtrational Rate; RRT-Renal Replacement Therapy**

Fifty-five (48.7%) of the respondents were noted to have developed complications resulting from CKD while 58(51.3%) respondents did not have any complications from CKD. Amongst those with complications, 15(27.3%) respondents developed anaemia alone; 7(12.7%) developed both “anemia and hypertension”; 26 (47.3%) developed “hypertension” alone while 1(1.8%) respondent each had “hypertension and dilated cardiomyopathy”, “hypertension and erectile dysfunction”, “hypertension and seizure”, “peripheral neuropathy”, and “renal osteodystrophy” respectively.

### 3.2 Relationship between Sociodemographic Characteristics and Quality of Life of CKD Respondents

In Table IIIa, and IIIb, none of the sociodemographic variables was statistically significant with the domains of WHOQOL-BREF.

**TABLE 3a: COMPARING THE MEAN SCORES OF OVERALL QOL AND HEALTH SATISFACTION BASED ON SOCIODEMOGRAPHIC VARIABLES OF RESPONDENTS**

VARIABLES	OVERALL QOL mean±SD	Test Statistic	P-value	HEALTH SATISFACTION mean±SD	Test Statistic	P-value
<b>Age</b>						
18-40	3.340±0.891			2.809±1.135		
41-60	3.324±1.002			2.623±1.010		
>60	3.379±0.622	f=0.034	0.967	3.035±0.906	f=1.282	0.282
<b>Sex</b>						
Male	3.276±0.914			2.655±1.101		
Female	3.418±0.810	t=0.875	0.384	2.964±0.962	t=1.583	0.116
<b>Marital status</b>						
Single	3.300±0.988			2.800±1.297		
Married	3.333±0.844			2.720±0.938		
Divorced	3.000±0.000			3.000±0.000		
Widowed	3.714±0.488	f=0.505	0.680	3.714±0.488	f=2.006	0.117
<b>Religion</b>						
Christianity	3.286±0.890			2.878±1.053		
Islam	3.391±0.847	t=0.638	0.525	2.750±1.039	t=0.643	0.522
<b>Employment</b>						
Employed	3.333±0.908			2.765±1.003		
Unemployed	3.375±0.751	t=0.230	0.819	2.906±1.146	t=0.645	0.520
<b>Education</b>						
None /Primary	3.196±0.833			2.630±0.878		
Secondary/Tertiary	3.448±0.875	t=1.534	0.128	2.925±1.132	t=1.485	0.140
<b>Ethnicity</b>						
Yoruba	3.362±0.867			2.848±1.045		
Others	3.125±0.834	t=0.746	0.457	2.250±0.886	t=1.573	0.118
<b>Adequate Support</b>						
Yes	3.400±0.908			2.841±1.081		
No	3.280±0.809	t=0.713	0.478	2.760±1.001	t=0.410	0.683

**Key: SD= Standard Deviation**

**TABLE 3b: COMPARING THE MEAN SCORES OF PHYSICAL HEALTH AND PSYCHOLOGICAL HEALTH DOMAINS BASED ON SOCIODEMOGRAPHIC VARIABLES OF RESPONDENTS**

VARIABLES	DOMAIN 1 mean±SD	Test Statistics	P-value	DOMAIN 2 mean±SD	Test Statistics	P-value
<b>Age</b>						
18-40	50.55±19.19			55.17±14.37		
41-60	48.43±17.38			58.16±13.58		
>60	51.55±13.99	f=0.287	0.751	61.41±7.82	f=2.183	0.118
<b>Sex</b>						
Male	49.29±16.35			56.84±13.34		
Female	50.98±18.33	t=0.517	0.606	58.71±12.41	t=0.768	0.444
<b>Marital Status</b>						
Single	51.77±19.69			54.67±15.66		
Married	49.28±16.51			58.53±11.58		
Divorced	25.00±0.00			44.00±0.00		
Widowed	55.57±13.44	f=1.088	0.369	64.57±10.55	f=1.736	0.163
<b>Religion</b>						
Christianity	47.35±16.87			55.49±13.78		
Islam	52.23±17.43	t=1.498	0.137	59.48±11.95	t=1.647	0.102
<b>Employment</b>						
Employed	49.47±17.27			58.36±13.22		
Unemployed	51.75±17.50	t=0.630	0.530	56.22±12.00	t=0.795	0.429
<b>Education</b>						
None /Primary	47.78±15.06			58.11±11.02		
Secondary/Tertiary	51.72±18.60	t=1.191	0.236	57.51±14.08	t=0.243	0.808
<b>Ethnicity</b>						
Yoruba	50.78±17.26			58.03±12.98		
Others	41.37±16.08	t=1.492	0.139	54.12±11.56	t=0.826	0.411
<b>Adequate Support</b>						
Yes	52.22±17.42			59.38±12.64		
No	47.46±16.92	t=1.462	0.147	55.70±13.00	t=1.519	0.132

**Key: SD= Standard Deviation**

However, Table IIIc, shows that age greater than 60 years ( $p= 0.001$ ) and presence of adequate social support from relatives and friends ( $p= 0.038$ ) were statistically significantly associated with a higher score on the environment domain, while been divorced ( $p=0.005$ ) was significantly associated with a low score on this domain (i.e. poorer QOL).

**TABLE 3c: COMPARING THE MEAN SCORES OF SOCIAL RELATIONSHIP AND ENVIRONMENT DOMAINS BASED ON SOCIODEMOGRAPHIC VARIABLES OF RESPONDENTS**

VARIABLES	DOMAIN 3 mean±SD	Test Statistic	P-value	DOMAIN 4 mean±SD	Test Statistics	P-value
<b>Age</b>						
18-40	61.79±14.64			49.21±12.15		
41-60	57.81±15.51			51.51±11.43		
>60	56.83±11.68	f=1.352	0.263	58.97±9.55	f=6.880	0.001
<b>Sex</b>						
Male	58.48±15.44			53.14±11.37		
Female	59.98±13.08	t=0.555	0.580	51.76±12.46	t=0.613	0.541
<b>Marital Status</b>						
Single	59.70±16.36			50.53±12.76		
Married	60.00±13.19			52.91±11.05		
Divorced	56.00±0.00			19.00±0.00		
Widowed	49.14±15.68	f=1.271	0.294	60.86±7.15	f=4.494	0.005
<b>Religion</b>						
Christianity	56.82±15.86			51.41±10.52		
Islam	61.05±12.80	t=1.569	0.120	53.28±12.84	t=0.829	0.409
<b>Employment</b>						
Employed	58.25±14.81			51.22±11.14		
Unemployed	61.66±12.80	t=1.144	0.255	55.63±13.23	t=1.793	0.076
<b>Education</b>						
None /Primary	57.46±13.15			53.52±9.970		
Secondary/Tertiary	60.42±15.01	t=1.083	0.281	51.75±13.05	t=0.779	0.437
<b>Ethnicity</b>						
Yoruba	58.67±14.33			52.76±11.69		
Others	66.37±12.47	t=1.478	0.142	48.62±14.46	t=0.949	0.345
<b>Adequate Support</b>						
Yes	58.97±16.27			54.52±11.88		
No	59.52±11.49	t=0.203	0.840	49.88±11.48	t=2.095	0.038

**Key : SD= Standard Deviation**

### 3.3 Relationship between Clinical Factors and Quality of Life of CKD Respondents

#### 3.3.0 Overall Quality of Life

Among the clinical variables, late stage of CKD ( $p= 0.017$ ) and being on current treatment with RRT ( $p= 0.045$ ) were significantly associated with lower score on the overall quality of life (i.e. poorer QOL) (Table IVa).

#### 3.3.1 Health Satisfaction

In Table IVa, the presence of complication ( $p= 0.026$ ) and being on higher number of medication ( $p= 0.010$ ) were the clinical variables that were significantly associated with lower scores (i.e. poorer QOL) on this domain.

**TABLE 4a: COMPARING THE MEAN SCORES OF OVERALL QOL AND HEALTH SATISFACTION BASED ON THE CLINICAL PARAMETERS OF RESPONDENTS**

VARIABLES	OVERALL QOL mean±SD	Test Statistic	P-value	HEALTH SATISFACTION mean±SD	Test Statistic	P-value
<b>Severity of CKD</b>						
Early	3.62±0.68			3.05±1.08		
Late	3.21±0.91	t=2.426	0.017	2.68±1.01	t=1.787	0.077
<b>Presence of complication</b>						
Yes	3.20±0.97			2.58±1.07		
No	3.48±0.73	t=1.756	0.082	3.02±0.98	t=2.259	0.026
<b>Number of medications</b>						
0-5	3.39±0.81			2.95±1.05		
6-10	3.21±1.01	t=1.000	0.320	2.38±0.90	t=2.618	0.010
<b>Previous treatment with RRT</b>						
Yes	3.00±0.87			2.44±0.88		
No	3.37±0.86	t=1.253	0.213	2.84±1.05	t=1.083	0.281
<b>Current treatment with RRT</b>						
Yes	2.71±0.75			2.28±0.75		
No	3.39±0.86	t=2.023	0.045	2.84±1.05	t=1.367	0.174

**Key: SD= Standard Deviation RRT= Renal Replacement Therapy**

**CKD= Chronic Kidney Disease**

### 3.3.2 Domain I (Physical Health)

In Table IVb, among the clinical characteristics of CKD patients that were considered, having a late stage of CKD ( $p= 0.007$ ), using higher number of medication ( $p< 0.001$ ), the presence of complication ( $p= 0.006$ ) and being on current treatment with RRT ( $p< 0.001$ ) were significantly associated with lower scores (i.e. poorer QOL) on the physical health domain of WHOQOL-BREF.

### 3.3.3 Domain II (Psychological Domain)

Table IVb shows that late stage of CKD ( $p= 0.04$ ) and current treatment with RRT ( $p= 0.01$ ) were statistically significantly associated with lower scores (i.e. poorer QOL) on this domain.



**TABLE 4b: COMPARING THE MEAN SCORES OF PHYSICAL HEALTH AND PSYCHOLOGICAL HEALTH DOMAINS BASED ON THE CLINICAL PARAMETERS OF RESPONDENTS**

VARIABLES	DOMAIN 1 mean±S.D	Test Statistic	P-value	DOMAIN 2 mean±S.D	Test Statistic	P-value
<b>Severity of CKD</b>						
Early	56.30±14.56			61.30±13.40		
Late	47.10±17.79	t=2.728	0.007	56.03±12.33	t=2.073	0.040
<b>Presence of complication</b>						
Yes	45.58±17.37			55.51±13.45		
No	54.41±16.20	t=2.796	0.006	59.88±12.03	t=1.822	0.071
<b>Number of medications</b>						
0-5	53.83±16.52			58.86±12.75		
6-10	39.34±14.99	t=4.166	<0.001	54.55±12.90	t=1.563	0.121
<b>Previous treatment with RRT</b>						
Yes	42.33±16.63			57.22±11.89		
No	50.79±17.25	t=1.414	0.160	57.80±13.00	t=0.128	0.898
<b>Current treatment with RRT</b>						
Yes	27.71±9.98			45.71±6.68		
No	51.59±16.65	t=3.740	<0.001	58.55±12.80	t=2.621	0.010

**Key: SD= Standard Deviation RRT= Renal Replacement Therapy CKD= Chronic Kidney Disease**

### 3.3.4 Domain III (Social Relationships)

No clinical variable showed any significant relationship with the Social Relationship domain of WHOQOL-BREF (Table IVc).

### 3.3.5 Domain IV (Environment)

In Table IVc, late stage of CKD (p= 0.035) and being on current treatment of RRT (p= 0.018) were statistically significantly associated with lower scores (i.e. poorer QOL) on the Environment domain of WHOQOL-BREF.

**TABLE 4c: COMPARING THE MEAN SCORES OF SOCIAL RELATIONSHIP AND ENVIRONMENT DOMAINS BASED ON CLINICAL PARAMETERS OF RESPONDENTS**

VARIABLES	DOMAIN 3 mean±S.D	Test Statistic	P-value	DOMAIN 4 mean±S.D	Test Statistic	P-value
<b>Severity of CKD</b>						
Early	61.65±15.03			55.84±11.89		
Late	58.03±13.87	t=1.267	0.208	50.83±11.60	t=2.137	0.035
<b>Presence of complication</b>						
Yes	57.93±15.44			50.31±10.67		
No	60.43±15.44	t=0.930	0.354	54.52±12.68	t=1.904	0.059
<b>Number of medications</b>						
0-5	60.38±13.68			53.34±12.54		
6-10	55.83±15.70	t=1.487	0.140	49.93±9.45	t=1.339	0.183
<b>Previous treatment with RRT</b>						
Yes	64.55±13.22			54.44±8.96		
No	58.75±14.35	t=1.171	0.244	52.30±12.12	t=0.518	0.605
<b>Current treatment with RRT</b>						
Yes	53.57±12.78			42.28±11.35		
No	59.58±14.37	t=1.078	0.283	53.14±11.65	t=2.391	0.018

**Key: SD= Standard Deviation RRT= Renal Replacement Therapy**

**CKD= Chronic Kidney Disease**

#### 4. Discussion

The sociodemographic variables that have significant association with quality of life were age group of respondents, marital status and level of social support. The age group of the respondents has a significant association with the environment domain (Domain III) of WHOQOL-BREF. It was found that chronic kidney disease (CKD) patients, who were elderly, scored higher on this domain. The result is comparable to that obtained in a United State (US) study by Kimmel et al 1995, who found that satisfaction with life scores (a global, subjective measure of quality of life) correlated with advancing age. The reason that may be adduced for this finding in the present study is that younger individuals may be more worried and troubled by having a diagnosis of CKD which may negatively affect their ability to fulfill major role obligations and also reduce their life expectancy.

A divorced status was also found to be associated with a lower quality of life on the environmental domain of WHOQOL-BREF. This finding may not be unrelated to the lack of social support in the face of a life threatening illness.

Respondents in this study who reported receiving adequate level of support from relatives or friends scored higher on the quality of life instrument. This result is similar to a study on the relationship between perceived social support and quality of life in Iranian hemodialysis patients where the researchers found a statistically significant relationship between perceived social support and health-functioning, socioeconomic, psychological-spiritual, and family subscales of QOL (Rambod and Rafii 2010). Similarly, Kimmel et al 1995 reported that satisfaction with life score correlated with level of social support. This finding may not be surprising as the

presence of adequate social support for patients with chronic illness in general is known to reduce the burden resulting from the illness.

The severity of CKD in the patients was found to be significantly associated with low scores on overall quality of life, physical health (Domain I), psychological health (Domain II) and environment domain (Domain III) of WHOQOL-BREF. This is comparable to the results obtained in a nephrology clinic in North America, where baseline measures of HRQOL were reduced in CKD patients in proportion to the severity grade of their CKD (Mujais et al. 2009). Similarly, Rocco et al 1997 reported that there was a significant negative correlation between overall Quality of Well-Being (a general health-related quality of life index) and glomerular filtration rate (GFR). They concluded that patients with moderate to advanced renal insufficiency had a reduced QOL.

Presence of complications resulting from CKD was found to have a significant association with low scores on the Health Satisfaction and physical health domain of WHOQOL-BREF in the present study. This is comparable to a study using Kidney disease Quality of Life (KDQOL) instrument among CKD patients by Mujais et al 2009 where history of cardiovascular co morbidities and anemia were found to be associated with lower health related quality of life (HRQOL) scores. Similarly, in a US study among CKD patients using the Medical Outcomes Study Short Form-36 (SF-36): a standard QOL instrument, it was reported that hemoglobin level was associated positively with higher mental and physical QOL scores in all individual and component scales of SF-36 except pain (Perlman et al. 2005).

Participants in this study who were on many drugs at the same time scored low on Health satisfaction and Physical health domain of WHOQOL-BREF. Possible reason for this finding include the fact that respondents who were likely to be on many drugs at the same time were more likely to have more co-morbid problems and may also be at an advanced stage of CKD. All these factors may constitute great burden for the patients and invariably reduce their quality of life.

Respondents who were on current hemodialysis treatment scored low on the Overall quality of life, Physical health, Psychological and Environment domains of WHOQOL-BREF. It was also observed in the study that current treatment with RRT was significantly associated with low scores in all the domains. These findings are comparable to a report by Kalender et al 2007, where all the SF-36 subscales were lower in hemodialysis (HD) and Continuous Ambulatory Peritoneal Dialysis (CAPD) patients compared to healthy control. Likewise Perlman et al 2005 reported that CKD patients had higher SF-36 scores than a large cohort of HD patients.

## 5. Conclusion

This study has shown that being elderly and the presence of adequate social support were significantly associated with higher scores on WHOQOL-BREF domains while being divorced, late stage of CKD, presence of complications, being on higher number of medication and being on a current treatment of RRT were significantly associated with poor quality of life among CKD patients. Thus, it may be important to educate the public about CKD, the causes and the importance of social assistance for affected patients. The study also underscores the need for screening, early diagnosis and treatment of patients in order to prevent complications. These measures may help improve the quality of life of CKD patients.

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