

Quality of Life in Patients on Renal Dialysis in Urban Area , Dakahlia Governorate ,Egypt

Mohammad AlKot *, Mahmoud Kora **, Aml A. salama *, Zeinab Kasem *** Walaa Refat ****

*Family Medicine department , Faculty of medicine , Menoufia University.

**Internal Medicine department, Faculty of medicine , Menoufia University.

***Community Medicine department, Faculty of medicine , Menoufia University.

****Ministry of Health

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Abstract

Background: Chronic kidney disease (CKD) is a major health problem worldwide with increase morbidity and mortality and significant impact on patient quality of life (QoL) that is a main component of health outcome. In most of developing countries, the health related QoL gains less attention of health care providers. This needs more assessment to frame the rehabilitation and treatment programs and policies of chronic renal failure patients. **General objective:** to promote QoL of hemodialysis (HD) patients. **Specific objectives** to descube QoL among these patients. **Methodology:** The study is a cross section study conducted on patients with ESRD on regular HD at Talkha central hospital, Dakahlia Governorate, Egypt. Health related QoL (HRQoL) was assessed using the validated Kidney Disease QoL-Short Form (KDQOL-SF) tool. It includes one multi-item scale. **Results:** The patients' QOL scores were very low (below 50) for all subscales. The highest score was on social function (38.86 ± 21 Range 25.0 - 87.5), physical function (33.87 ± 13.76 Range 4.55 - 68.18) and Overall Health Rating (35.61 ± 10.03 Range 14.31- 61.15) were directing very weakly to the best and the lowest was on role of physical function (8.59 ± 21.46 Range 0 - 100), and Pain (17.18 ± 8.07 Range 25.0 - 66.67) . **Conclusion:** Patients with ESRD on HD generally have a diminution reduction of their quality of life scores. The results of the study showed that there are no differences on QoL among male and female patients while age, occupation and presence of diabetes affect the total QoL score.

Key words :End stage chronic kidney disease , quality of life , morbidity and mortality

*corresponding author, Aml A. salama Email: aml_salama2002@yahoo.com

Introduction

Chronic kidney disease is a slow loss of kidney function over time that needs dialysis or kidney transplant. ⁽¹⁾ Patients with End-stage renal disease (ESRD) on renal replacement therapy live with varying degrees of physical and psychological symptoms as well as

impaired social functioning ⁽²⁾. Quality of life (QOL) is an important indicator of health and well-being, it determines the effectiveness of treatment, decide the priority for resources distribution, and help in policy developments ⁽³⁾. Since chronic disease is not curable, the aim is

to improve the well-being of patients and prolong life without symptoms, thus QOL is used to evaluate the outcome of treatment given. In addition, QOL gives information about other symptoms that are equally or more important to patients' perspective and establishes information about the range of problems that affect the patients. Furthermore, QOL reflects the patients' preference ⁽⁴⁾. The quality of life of patients requiring dialysis is affected significantly, since it is associated with changes in their daily habits and in their lifestyle for both themselves and their families ⁽⁵⁾.

Although HRQOL cannot be measured directly, items capture the patient-values that comprise HRQOL have been incorporated into reliable and valid instruments such as the generic and widely used Medical Outcomes Study questionnaires ⁽⁶⁾. HRQOL concept addresses the effects of individual health (including the effects of both disease and its treatment) on physical, cognitive, and social functioning in day-to-day life. Patients with ESRD who are treated with dialysis experience many threats to HRQOL, both from the myriad symptoms of ESRD itself and from the physical and mental burden of dialysis treatment. For these patients, the careful assessment of HRQOL can help guide provision of medical management to optimize their health experience ⁽⁷⁾. The objectives of the study are to describe QoL in patient on renal dialysis and to estimate the burden of renal dialysis on emotional well-being, physical function, and role limitation in the family due to physical and general health affection.

Patients and Methods

The study was approved by the Ethical Committee of the Faculty of Medicine,

Menoufia University. The study was conducted in Talkha district which was randomly selected to represent an urban area of Dakahlia Governorate. Talkha central Ministry of Health (MOH) Hospital is the only dialysis center in Talkha. An official permission was obtained from the authorities of hospital. Informed consent was signed by all participants after simple and clear explanation of the research objectives and procedures. The study is a cross section study conducted which was conducted during the period from 1st of June to 1st of September 2014 for a duration of four months. All patients attending Talkha central hospital HD unit during the period of the study were included after obtaining their consent. Both genders adult patients aged 20 -70 years on HD for more than 6 months were included in the study . Patients who refused to participate and those have hearing, speech, cognitive deficits that will impair their understanding level were excluded, so the total sample were 65 patients.

All patients with ESRD fulfilling inclusion criteria were subjected to:

1. Full history taking: including data of personal history as age, sex, occupation, education, duration of the disease.

Socioeconomic level was determined according to El-Gilany, 2012⁽⁸⁾, which has 7 domains with a total score of 84 , categorized into 4 socioeconomic levels according to the 3 quartiles, High level, those with scores above 60, Middle level those with scores from 46-59 and Low and very low level those with scores less than 46.

2. Complete physical examination:

- a) Vital signs and anthropometric measurements: Blood pressure measurement: Hypertension was defined as a systolic blood pressure ≥ 140 mmHg and/or a diastolic blood pressure ≥ 90 mmHg (JNC8)⁽⁹⁾. The participants currently using antihypertensive medications were also classified as hypertensive even if they had normal blood pressure.
- b) Local examination of the chest, heart and abdomen was done for each subject to exclude other co morbidities.

3. Laboratory investigations:

Carried out in Talkha central hospital laboratories as part of routine follow up of the patients : Blood hemoglobin, Serum total calcium, phosphorus and potassium as well as Blood urea nitrogen (BUN). Adequacy of dialysis was calculated for each patient as a percentage of urea reduction to pre-dialysis value. $URR \geq 65$ indicated a good adequacy of dialysis and is recommended cut- off value.

4. HRQOL was assessed using the KDQOL-SF version 1.3.

KDQOL-SF has been validated in the ESRD population, includes 43 kidney disease-targeted items as well as 36 items that provide a generic score and overall health rating. The disease-targeted items focus on particular health-related domains of patients on dialysis. The questionnaire was completed by the patients themselves, with the help of a family member or the physician of dialysis unit if needed.

The SF-36 is a general tool, developed to be used on all populations irrespective of their health or illness. It is one of the most commonly used measures to study the QOL in dialysis

patients⁽¹⁰⁾. In addition to the English version developed for use in the United States, it is approved and available through the Boston-based International Quality of Life Assessment project (IQOLA) for other settings. This study has used the SF-36 tool version 1.3. It consists of 36 items that assess eight dimensions (subscales). The reliability of the SF-36 were quite acceptable and ranged from 0.78 to 0.92. It's R squared values ranged from 0.89 to 0.95.

The number of questions directed to each health concept range from two (for social functioning and bodily pain) to 10 (for physical functioning). The number of response options per question range from two (no, yes) to six (none, very mild, mild, moderate, severe, and very severe). Scores are assembled using the Likert method for summated ratings. All raw scale scores are linearly converted to a 0 (worst possible health status or QOL) to 100 (best possible health status or QOL). The score of the subscales as well as the final global score of the SF-36 ranges 0: 100⁽¹¹⁾. As background questions SF-36 asks about hospital admission in the last 6 months and it's duration and the time on dialysis if less, equal or more than 2 years. The questionnaire was filled by the researcher after explanation of each question to individual patient in clear, easy understood manner.

Data management:- The data were tabulated and analyzed by Statistical Package of Social Science program (SPSS) version 20. Quantitative data was expressed as mean and standard deviation ($X \pm SD$) and analyzed by Student t- test for comparison of two groups of normally distributed variables and Mann-Whitney U test for non normally distributed ones. F- test

(ANOVA – Analysis of variance) is used for comparison between more than two quantitative variables with different variance if normally distributed and Krusal Wallis H Test for non parametric values . Level of significance was set at p value <0.05.

Results

Table 1: The study was carried out on 64 patients aged (52.50 ± 10.69), 53.1% of them were males, 87.5% of them were unmarried, 26.6% had secondary education, and 45.3% of them were employee. Urban residence accounted for 75.0%. Low socio-economic score was achieved in 42.2%.

Table 2: As the normalized scores of KDQOL vary from 0 (worst) to 100 (best possible KDQOL), this can explain the following: Burden of kidney disease ($11.03 \pm 12.03/ 0 - 62.5$), the burden vary from 0-62.5, this means a great burden of kidney disease on the patients. Work status ($29.68 \pm 45.17/ 0 - 100$) is directing strongly to the worst this can be explained by the great value of SD. Also social support ($28.64 \pm 23.65/ 0 - 100$) is directing strongly to the worst this can be explained by the great value of SD. On contrary, cognitive function ($57.08 \pm 13.48/ 6.67 - 100$), quality of social interaction ($57.08 \pm 13.48/ 20-90.33$) and dialysis of staff encouragement ($81.83 \pm 15.57/ 37.5 - 100$) are directing strongly to the best which can be explained by the great value of the mean, lowest value of SD and the starting point of the range which doesn't include the (0) value.

Table 3: Role of physical function ($8.59 \pm 21.46/ 0 - 100$), is directing strongly to the worst this can be explained by the great value of SD. Pain ($17.18 \pm 8.07/ 25-66.67$) is directing strongly to the worst. The small

value of the mean can be explained by the narrow range (25.0-66.7) with most of the patients directed to the lowest value. Also general health perception ($19.45 \pm 14.61/ 0-75.0$) is directing strongly to the worst. The small value of the mean can be explained by that most of the patients directed to the lowest value. But, physical function ($33.87 \pm 13.76/ 4.55 - 68.18$), social function ($38.86 \pm 21.25/ 0-87.5$), and Overall Health Rating ($35.61 \pm 10.03/ 14.31- 61.15$) are directing very weekly to the best which can be explained by the great value of the mean, lowest value of SD.

Table 4: shows that there is highly statistical significant negative correlation between age of patients and some parameters of KDQOL as: Physical function, emotional wellbeing, Quality of social interaction ($P < 0.001$), pain, social function, energy/fatigue, symptoms and problems score, Burden of kidney disease, work Status, cognitive function, sleep, social support, dialysis staff encouragement and patient satisfaction ($P < 0.01$). There is significant positive correlation between hemoglobin level and perception of general health parameter of kidney disease quality of life ($P = 0.003$). Also it shows that there was statistically significant positive correlation with emotional life of patients ($P = 0.013$). There is highly statistical significant positive correlation between Physical parameter score and some parameters of KDQOL as: Work Status and Quality of social interaction ($P < 0.001$), Social function, emotional wellbeing, energy/fatigue, cognitive function and sleep ($P < 0.01$). Role of emotional wellbeing, sexual function and social support ($P < 0.05$). But also it shows that there was high statistically significant negative correlation between Physical parameter score and some parameters of KDQOL as: Effect of kidney disease, Burden of kidney disease ($P < 0.001$). Pain ($P = 0.003$). There is statistically significant positive correlation between time on dialysis and the work status parameter of Kidney diseases quality of life ($P = 0.002$). But it shows that there is statistically significant

negative correlation between time on dialysis and physical function ($P=0.011$).

Table 5: This table shows that, KDQOL total score is significantly higher among patients aged ≤ 50 year ($37.96 / 22.08-61.15$) than those aged >50 years ($32.69 / 14.31-60.59$) ($P=0.006$). It increases significantly with higher education ($p = 0.022$), also it is significantly higher among patients who are currently working ($44.92/ 14.31-61.15$) than those without work ($32.74/33.74-58.15$) ($P<0.001$). Sex of the patient, residence, marital status and living stander constituted no significant effect on patient perceived quality of life.

Table 6: KDQOL total score is significantly higher among non -diabetic patients (38.83 ± 9.87) than those with diabetes (33.26 ± 9.51) ($P=0.027$). Also it is significantly higher among patients whose hospital admission in past 6 months was less than 3 days (38.62 ± 8.93) than those longer hospital stay (27.28 ± 8.17) ($P<0.001$). It is surprising that KDQOL total score was significantly higher among patients whose kidney disease duration was ≥ 2 years (40 ± 10.18) than those with <2 years duration (33.47 ± 9.31) ($P=0.010$). Presence of hypertension, hemoglobin level, urea reduction rate and serum phosphorus, calcium, potassium level constitute no effect on patient perceived quality of life score.

Discussion

A cross-sectional study was carried out to evaluate the QoL for patients with end stage renal disease using KDQOL-SF 36-Item version 1.3. The study was conducted in Talkha central hospital on all patients with end stage renal disease attended hospital for dialysis.

The study reported lower scores in symptom/problem list and higher scores in burden of disease. This return to factors associated with the burden of disease as the cause of ESRD and the

number of co-existing diseases. On contrary, cognitive function, quality of social interaction and staff of dialysis encouragement were directing strongly to the best which can be explained by the great value of the mean, lowest value of SD and the starting point of the range which did not include the (0) value. These associations are supported by Ware's ⁽¹¹⁾ study reporting that patients' participation in care planning could lead to increased treatment satisfaction and increased HRQOL scores.

This study showed that, role of physical function was directed strongly to the worst with increased variance. Pain, general health perception was directing strongly to the worst. The small value of the mean can be explained by the narrow range ($25.0-66.7$) with most of the patients directed to the lowest value. Physical function, social function, and Overall Health Rating ($35.61 \pm 10.03 / 14.31-61.15$) were directed very weekly to the best which can be explained by the great value of the mean and lowest value of SD. In UAE, Belsco et al (2006) ⁽¹²⁾ found average lower scores on the role physical and the physical function subscales in Emirates which may be attributed to the usually high living standards compared with other countries. Sufficient income for dialysis patients plays an important role in providing the basic needs such as food and transportation expenses to and from the hospital as well as buying the prescribed medication. Sufficient income may have an impact on the overall satisfaction with life and consequently having a better quality of life.

The present study shows that there is a negative correlation between age of patients and some parameters of KDQoL as physical function, pain, social

function, emotional, energy, fatigue, symptoms and problems score. These results agreed with Mapes et al (2004) ⁽¹³⁾ who reported that, the effect of age on QoL is controversial. Older age co-morbidity may have a negative impact on QoL that depends mainly on the severity of co-morbid conditions and the physical decline over time. This study does not agree with Kao and colleagues (2009) who found that, age was significantly inversely associated with physical functioning, role physical functioning, vitality and social function, but not the mental health subscales of the SF-36. Loos et al. ⁽¹⁴⁾ found that elderly patients who had planned pre-dialysis education and preparation had better QoL scores. Patients who have fewer chronic health problems generally report better QoL than those with more health problems ⁽¹⁵⁾.

Studying QoL in dialysis patients without paying attention to anemia severity and malnutrition may influence the overall QoL rating agreed with Breiterman-White, (2005) ⁽¹⁶⁾ ;who show that anemia negatively influences patients energy and activity levels, sleep and eating behavior, general health status, sex life, and can cause muscle weakness, leg cramps and shortness of breath, therefore reducing the overall QoL. Treating anemia reduces morbidity and mortality and improves QOL ⁽¹⁷⁾.

This study shows that there was a highly statistically significant positive correlation between physical parameter score and some parameters of KDQOL as: effect of kidney disease, burden of kidney disease, work Status and quality of social interaction ($P < 0.001$), pain, social function, emotional wellbeing, energy/fatigue, cognitive function and sleep ($P < 0.01$). These results are

supported by the study done by Shrestha (2008) ⁽¹⁸⁾ who found that, the great deficit existed for physical component score (PCS) indicating that the restriction imposed by HD on the lives of these patients involved their ability to participate in normal daily activities and roles. This can have considerable implication for their ability to maintain employment, participate fully in family and community life, thereby potentially altering lifestyle and having psychological, employment and financial ramifications. In contrast Park et al. (2010) ⁽¹⁹⁾ found higher mental component score (MCS) compared to PCS in European countries, USA, and Japan.

There was a highly statistically significant positive correlation between social support score and some parameters of KDQOL which agreed with the study done by Parkerson, and Gutman (2000) ⁽²⁰⁾ who reported that, social support is positively associated with higher quality of life in HD patients. Religious beliefs and spirituality have also shown to be important to a patient's overall sense of well-being ⁽²¹⁾. This can be explained by the fact that patients with ESRD must confront daily challenges from chronic fatigue, dietary and fluid restrictions, changes in economic status, and the high cost of health care, as well as embarrassing disfigurement, dependence on others, and loss of family role, self-esteem, and family dynamics ⁽²²⁾.

The present study showed that there is a positive correlation between time on dialysis and physical function and the work status parameters of KDQOL. Increased length of time on dialysis could lead to the extension of suffering from the consequences of kidney failure.

Dialysis patients do not only face treatment-related stressors but have to deal with changes in their life, self-confidence and family roles⁽²³⁾. Bohlke et al. (2008)⁽²⁴⁾, found that patients who had been on dialysis for short lengths of time had higher QoL scores. Pakpour et al. (2010)⁽²⁵⁾, found that longer time on dialysis correlated with poor SF-36 scores.

The present study showed that, KDQoL was better among patients aged ≤ 50 year and those who were currently working. This result agreed with a study done by Bohlke et al. (2008)⁽²⁴⁾, who found that, higher SF-36 scores were associated with younger age. Advanced age has been linked with the deterioration of physical activity and consequently lower SF-36 total scores in dialysis patients. In contrast, Valderrábano, et al., (2001)⁽²⁵⁾, reported that older patients were more satisfied with their life on dialysis and accept their limitations better than younger ones.

The present study showed that, having full-time employment had statistically significant positive influence on the SF-36 total scores in dialysis patients which is most likely related to the difference in the severity of illness as measured by the time on dialysis. Another factor that may contribute to unemployment is the access to dialysis services. In Egypt almost all facilities offer dialysis treatments during the daytime only, making it difficult for hemodialysis patients to maintain a normal working hours. Kao et al. (2009)⁽²⁶⁾, reported that, work status was associated with higher QoL scores. In contrast, Bohlke et al. (2008)⁽²⁴⁾ reported lower scores on the SF-36 among dialysis patients who were employed. Gender showing no statistically

significant relationship with the total scores of SF-36 in the dialysis sample was unexpected. Gender difference in different studies remains speculative. Possible explanations could include biological factors and biases in the provision of care according to gender.⁽²⁷⁾

The present study showed that, KDQOL total score was significantly higher among non -diabetic patients than those with diabetes .Also it was significantly higher among patients whose hospital admission was less than three days and those who are currently working. It was surprising that KDQOL total score was significantly higher among patients whose kidney disease duration was ≥ 2 years than those with more than two years. This can be explained by the dynamic adaptation of patients' expectations to their chronic illness. This is expected because kidney failure impacts negatively on patients' physical, psycho-social and economic wellbeing⁽²⁸⁾. Co-morbid medical conditions are common in patients on dialysis, and are an important contributing factor to clinical outcomes and QoL.

The study shows that the adequacy of dialysis represented by urea reduction ration has no effect on the quality of life of patients (p value =0.857), the same result reported by Anu et al.(2013)²⁹.

Limitations

The limitation of this study includes the small sample size and the use of only one clinical site. Replication using a larger sample from different of sites is recommended.

Conclusion

The study shows that patients undergoing HD have poor quality of life. Health personnel's awareness of that , including family physicians is

mandatory to identify specific problem area for individual patient and take action to improve that .

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Table 1: Distribution of the studied patients regarding Socio-demographic Data:

Demographic character	No	%
Sex		
Male	34	53.1
Female	30	46.9
Age of patients	52.50 ± 10.69	
Mean ± SD		
Marital status		
Married	56	12.5
Not Married	8	87.5
Patient education :		
Illiterate	1	1.6
Read & write	18	28.1
Basic education	17	26.6
Secondary school	15	23.4
High education	13	20.3
Patient Occupation		
No work or house wife	13	20.3
Unskilled worker	2	3.1
Skilled worker /farmer	12	18.8
Trades / business	2	3.1
Employment / retired	29	45.3
Professional	6	9.4
Residence		
Urban	48	75.0
Rural	16	25.0
Socio-economic score		
Low	27	42.2
Middle	33	51.6
High	4	6.3

Table 2: Mean Scores of Kidney disease-targeted scales of KDQoL of studied patients:

Kidney disease-targeted scales	Mean ± SD	Minimum to maximum
Symptoms and problem score	38.0 ± 11.05	10.42- 68.75
Effect of kidney disease	41.21±17.78	9.38 – 78.13
Burden of kidney disease	11.03 ±12.03	0 - 62.5
Work Status	29.68±45.17	0 -100
Cognitive function	55.62±17.9	6.67 - 100
Quality of social interaction	57.08±13.48	20- 90.33
Sleep	47.3 ±10.91	20.0- 77.5
Social support	28.64±23.65	0 - 100
Dialysis staff encouragement	81.83±15.57	37.5 - 100
Patient satisfaction	42.18 ±14.93	14.29– 71.43

Table 3: Mean Scores of 36-Item Subscales of KDQoL in the studied patients:

36-Item KDQOL Parameters	Mean ± SD	Minimum-Maximum
• Physical Function	33.87±13.76	4.55 -68.18
• Role of Physical Function	8.59 ± 21.46	0-100
• Pain	17.18 ± 8.07	25-66.67
• General health perception	19.45±14.61	0-75
• Social function	38.86±21.25	0- 87.5
• Emotional well being	33.18±12.64	8 -76
• Role of Emotional wellbeing	32.29± 44.03	0-100
• Energy/ fatigue	28.98±14.99	0- 65
• Overall Health Rating	35.61 ±10.03	14.31-61.15

Table 4: Correlation of age, hemoglobin , physical parameter score and time on dialysis score with Parameters of KDQOL of the studied group:

Parameters of KDQOL	Age of patient		Hemoglobin		Physical parameter score		Time on Dialysis	
	r	P value	r	P value	r	P value	r	P value
Physical Function	-0.31	0.011 ^(s)	0.04	0.729	-	-	-0.31	0.011 ^(s)
Role of Physical Function	-0.02	0.845	-0.20	0.876	-	-	-0.02	0.845
Pain	0.23	0.066	-0.06	0.618	-0.36	0.003	0.23	0.066
General health perception	0.08	0.492	0.36	0.003 ^(s)	0.18	0.156	0.08	0.492
Social function	0.19	0.127	-0.22	0.08	0.47	0.002	0.19	0.127
Emotional wellbeing	0.08	0.518	0.13	0.302	0.28	0.022	0.08	0.518
Role Emotional	0.18	0.141	0.30	0.013 ^(s)	-	-	0.18	0.141
Energy/ fatigue	0.00	0.983	0.18	0.144	0.36	0.003	0.00	0.983
Symptoms &problem score	0.15	0.226	-0.01	0.912	0.19	0.122	0.15	0.226
Effect of kidney disease	0.17	0.163	0.06	0.615	-0.47	<0.001	0.17	0.163
Burden of kidney disease	0.16	0.183	0.15	0.228	-0.47	<0.001	0.16	0.183
Work Status	0.37	0.002 ^(s)	0.14	0.251	0.44	<0.001	0.37	0.002 ^(s)
Cognitive function	0.04	0.718	-0.04	0.748	0.33	0.006	0.04	0.718
Quality of social support	0.12	0.333	0.07	0.578	0.55	0.001	0.12	0.333
Sleep	0.19	0.120	0.19	0.115	0.41	0.001	0.19	0.120
Social support	0.002	0.988	0.18	0.142	0.26	0.030	0.002	0.988
Dialysis staff encouragement	0.005	0.97	0.02	0.828	0.23	0.065	0.005	0.97
Patient satisfaction	0.06	0.62	0.08	0.485	0.22	0.077	0.06	0.62

(s)=statistically significant

Table 5: Effect of Patients' Demographic Characters on Their KDQOL Total score:

Patients' Demographic Characters	No.	KDQOL total score		P value
		Median (Range)		
AGE	≤50 years	26	37.96 (22.08 - 61.15)	0.006*
	> 50 years	38	32.69 (14.31 – 60.59)	
Sex of the patient	Male	34	36.16(14.31- 59.59)	0.554*
	Female	30	34.23(22.08 -60.15)	
Residence	Rural	48	35.15(15.13 – 59.15)	0.687*
	Urban	16	35.48 (22.08 – 56.21)	
Marital status	Married	56	34.65(24.54 – 61.15)	0.671*
	Not	8	35.45(14.31 – 58)	
Education	Illiterate	1	14.31 (---)	0.022**
	Read &write	18	33.59 (16.07 – 59.59)	
	Basic	17	34.72 (23 – 49.83)	
	Secondary	15	35.18 (22.08 – 49.7)	
	High	13	41.11 (29.2- 61.15)	
Occupation	Currently	20	44.92 (14.31 – 61.15)	<0.001**
	Not work	44	32.69 (33.74 -58.15)	
Living standard	High	4	50.05(26.93 – 56.21)	0.171
	Middle	33	35.59(22.08 – 49.75).	
	Low	27	34.19(14.8 – 60.84)	

* Mann Whitney U Test .

** Krusal Wallis H Test.

Table 6: Effect of patients' clinical parameters on their Total KDQOL score:

Patients' clinical Characters	Total score of KDQOL	t test	P value
	Mean ± SD		
Hypertension Yes No	31.92±9.47 36.94±9.47	1.796	0.077
Diabetic Yes No	33.26 ± 9.51 38.83 ± 9.87	2.26	0.027*
Hospital admission in past 6 months < 3 days ≥ 3 days	38.62 ± 8.93 27.28±8.17	4.57	< 0.001*
Duration of kidney disease < 2years ≥2 years	33.47±9.31 40.0 ± 10.18	-2.646	0.010*
Hemoglobin (mg/dl) < 11mg/dl ≥ 11mg/dl	34.05±10.02 38.58±9.59	-1.74	0.087
Adequacy of dialysis URR* < 65% URR* ≥ 65%	35.54±10.59 35.72±9.19	0.03	0.857
Serum Po4 (mg %) 2.5 -4.5 >4.5	36.21 ±10.36 35.36±9.98	0.281	0.779
Serum Ca+ (mg %) 9-11 < 9	35.16 ±9.99 37.78 ±10.46	-0.787	0.434
Serum K+ (mEq/L) <3.5 3.5- 5 > 5	32.36± 14.11 36.65±8.3 35.7 ±10.14	0.529**	0.592

URR : Urea Reduction Ratio * Statistically Significant

**F test