

Quality of life of patients with end stage renal disease on haemodialysis comparing to patients underwent kidneys transplantation in Iraq

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ABSTRACT

INTRODUCTION: Quality of life as perceived by patients with end stage kidney disease is an important measure of patient outcome.

OBJECTIVE: the current study was performed to evaluate Quality of life of haemodialysis patients and compare it to that of kidney transplant patients and to find the association between that quality and certain demographic variables in both groups of patients.

METHODS: The study was conducted on two groups, the 1st group patients (N= 50) on maintenance haemodialysis and the 2nd group patients (N= 50) who underwent renal transplantation. The patients' quality of life was measured using WHOQOL-BREF questionnaire.

RESULTS: The quality of life of haemodialysis patients was found to be significantly impaired in comparison to renal transplant patients. Female haemodialysis patients showed significantly ($P < 0.05$) lower Quality of life in the social dimensions of WHOQOL-BREF than did male haemodialysis patients. The transplant patients showed negative correlations between increasing the value of physical factors (-0.288) and psychological factors (-0.281) of WHOQOL-BREF with marital status.

CONCLUSION: Patients who undergo kidney transplantation have a significantly better Quality of life than those who continue on maintenance haemodialysis. There is a need to design and implement an educational program for health care professionals to help them to provide interventions to patients undergoing haemodialysis to improve their quality of life.

Key words: ESRD, transplantation, haemodialysis, quality of life.

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INTRODUCTION

End stage renal disease (ESRD) is the end result of a progressive worsening of renal function over a period of months or years. According to Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines, there are five stages of CKD based on the glomerular filtration rate. In stage 5 (GFR < 15 ml/ min), which is defined as ESRD there is total or near-total loss of kidney function which leads to poor life expectancy.¹

When the function of the kidney become irreversible, the patient reaches the ESRD, and has to start Renal Replacement Therapy (RRT). RRT is carried out by haemodialysis, peritoneal

dialysis, or renal transplant.² The availability of RRT has reduced the severity of symptoms and resulted in longer survival of patients with ESRD.⁴

End stage renal disease (ESRD) affects the physical and psycho-social functioning of the individuals as it needs a lifelong treatment.¹ The incidence of ESRD has been increasing progressively all over the world, both in developed and in developing countries.³

Over the past few decades, quality of life (QOL) has emerged as valuable research tools in assessing the outcome of therapeutic intervention in chronic diseases. ESRD is one such chronic disease causing a high level of disability

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in different domains of the patients' lives, leading to impaired QOL.⁴

Therefore, the effect of different therapeutic options on QOL should necessarily be considered in healthcare planning.³

In Iraq, there are very few published studies dealing with this topic, especially in ESRD,⁵ so we made this study to give us information about the patient's own views of different aspects of their life.

The objective of the current study was to evaluate QOL in haemodialysis patients with reference to their physical, psychological, social, and environmental health dimensions and compare it to that of kidney transplant patients and to find the association between that quality and certain variables including (age, sex, residence, educational level, marital status, family history and duration of treatment) in both groups of patients.

METHODS

Settings and study design: Patients were recruited from The Iraqi Centre of Renal Dialysis and The Centre of kidney Disease and Transplantation in Medical City in Baghdad, 100 patients included (50 patients were undergoing haemodialysis and 50 patients had undergone kidney transplantation). This study carried out from May to September 2015.

Ethical issues: The study was conducted according to the ethical approval obtained from the above centres. All participants in this study have been asked to provide their agreement or verbal consents to participate after explaining the aims and the nature of the study.

Definition of the cases and Inclusion and exclusion criteria: ESRD patients attending the above centres during the studied period who were aged 18 years and above of either sex. Haemodialysis patients should be on regular twice a week or more haemodialysis for at least 6 months or more. Kidney transplant patients should have kidney transplant at least 6 months or more prior to enrolment into the study. Patients excluded if they did not consent to participate, younger than 18 years, those who had graft loss or had hearing, speech or cognitive deficits that would impair understanding of the questions.

Sampling: During period of data collection one hundred ESRD patients were selected conveniently by the interviewer. The interviewer assisted by reading the items of the Arabic-translated form of WHOQOL-BREF questionnaire for the participants.

Procedure: This was a cross sectional study which conducted to compare the quality of life for patients who were on haemodialysis and those who had kidney transplant with reference to their physical, psychological, social, and environmental dimensions of health and also we try to find the association between that quality and certain variables including (age, sex, residence, educational level, marital status, family history and duration of treatment).

We choose WHOQOL-BREF instrument because it has been shown to display good discriminant validity, content validity and test-retest reliability. The World Health Organization (WHO) has provided guidelines for the process of translation and adaptation of instruments.

The WHOQOL-BREF questionnaire was scored after its administration to the study subjects. The scores are transformed to a range of 4-20 and the second transformation converts domain scores to a 0-100 scale to enable comparisons to be made between domains composed of unequal numbers of items.

The outcomes of the study were the quality of life of haemodialysis and renal transplant patients. Higher scores reflect better quality of life of the individuals.

Statistics: Statistical software (SPSS v. 12, Chicago, IL, USA) was used for data input and analysis. Means and standard deviations were obtained for each domain of WHOQOL-BREF and also for groups of the sociodemographic variables (age, sex, residence, educational level, marital status, family history and duration of treatment). The comparison of data was performed by Student's t-test. $P < 0.05$ was considered to be statistically significant. Pearson's correlation was used to study the correlation between QOL scores of each domain of WHOQOL-BREF and the sociodemographic variables.

RESULTS

Comparison of QOL scores: Quality of life of haemodialysis patients was found to be signif-

Table 1: Means of QOL indicators score for each group in four domains.

Domains	QOL scores Mean $\pm$ SD		P value
	Haemodialysis [†]	Transplant [§]	
Physical health	27.4 $\pm$ 10.61	52.71 $\pm$ 10.95	<0.001*
Psychological health	37.2 $\pm$ 9.8	60.91 $\pm$ 11.56	<0.001*
Social relationship	54.03 $\pm$ 12.7	60.5 $\pm$ 9.94	<0.001*
Environmental	34.52 $\pm$ 11.89	48.63 $\pm$ 11.88	<0.001*

[†] Total number in this group = 50 participants
[§] Total number in this group = 50 participants
 *P<0.001 is considered as statistically high significant, P < 0.05 is considered as statistically significant.
 TP: Transplantation.
 HD: Haemodialysis.

icantly ($P < 0.001$) impaired in all four dimensions of the WHOQOL-BREF questionnaire in comparison to the QOL of renal transplant patients. Compared to renal transplant patients, haemodialysis patients scored significantly ($P < 0.05$) lower QOL scores in all four dimensions of the WHOQOL-BREF questionnaire. See **Table 1**

Association between demographic and disease characters and QOL: Various demographic factors and their association to QOL were assessed

in ESRD patients on maintenance haemodialysis; the findings are tabulated in **Table 2**. The female patients reported significantly ($P < 0.05$) lower QOL scores in the social domains (47.9 ± 9.31) compared to the male haemodialysis patients (56.65 ± 16.95). However, in renal transplant patients, the result of the current study did not yield any significant association between demographic characters and QOL (**table 2**).

Correlation between Sociodemographic variables and WHOQOL-BREF dimensions: Pearson's correlation between continuous sociodemographic variables with the WHOQOL-BREF dimensions of HD patients showed that there was no significant relationship between all the variables and the four WHOQOL-BREF dimensions. However, Pearson's correlation between continuous sociodemographic variables with the WHOQOL-BREF dimensions of transplant patients showed that there were negative correlations between increasing the value of physical factors and psychological factors with marital status (in married patients the value is lower than single patients which is in turn lower than

Table 2: Sociodemographic and disease-related variables and QOL in haemodialysis and transplant patients.

	Variable	N	QOL scores of WHOQOL-BREF domains			
			Physical health	Psychological health	Social relationship	Environmental
Gender (HD)	Male	30	28.34 $\pm$ 12.21	37.62 $\pm$ 12.17	56.65 $\pm$ 16.29	34.48 $\pm$ 13.52
	Female	20	30.56 $\pm$ 11.93	37.9 $\pm$ 8.55	47.9 $\pm$ 9.31	34.22 $\pm$ 9.21
			P=0.536	P=0.929	P=0.035*	P=0.940
Gender (TP)	Male	29	54.2 $\pm$ 7.71	61.19 $\pm$ 8.92	60.04 $\pm$ 10.06	48.6 $\pm$ 12.46
	Female	21	50.17 $\pm$ 14.49	60.5 $\pm$ 14.71	61.08 $\pm$ 9.99	50.45 $\pm$ 10.7
			P=0.961	P=0.416	P=0.816	P=0.586
Residential area (HD)	Urban	33	53.46 $\pm$ 6.65	36.76 $\pm$ 11.24	52.69 $\pm$ 15.37	34.3 $\pm$ 12.19
	Rural	17	27.86 $\pm$ 11.39	41.64 $\pm$ 7.89	49.99 $\pm$ 13.05	34.69 $\pm$ 11.17
			P=0.478	P=0.202	P=0.611	P=0.927
Residential area (TP)	Urban	33	53.46 $\pm$ 6.65	61.73 $\pm$ 8.81	59.31 $\pm$ 10.16	47.06 $\pm$ 10.82
	Rural	17	50.84 $\pm$ 16.49	59.29 $\pm$ 15.83	62.73 $\pm$ 9.38	50.92 $\pm$ 12.87
			P=0.478	P=0.852	P=0.291	P=0.269
Duration of dialysis [†]	6-12	22	25.91 $\pm$ 11.98	36.53 $\pm$ 9.71	48.85 $\pm$ 11.85	32.53 $\pm$ 9.68
	13-24	14	29.21 $\pm$ 9.43	40.16 $\pm$ 6.48	52.97 $\pm$ 14.48	40.18 $\pm$ 12
	>24	14	29.34 $\pm$ 9.52	37.19 $\pm$ 15.28	60.09 $\pm$ 16.41	31.47 $\pm$ 13.62
			P=0.547	P=0.609	P=0.073	P=0.093
Duration of transplantation [†]	6-12	15	55.93 $\pm$ 8.28	62.47 $\pm$ 9.85	61.09 $\pm$ 10.77	52.29 $\pm$ 14.49
	13-24	22	49.67 $\pm$ 13.94	58.89 $\pm$ 14.56	59.45 $\pm$ 9.38	47.73 $\pm$ 10.62
	>24	13	54.12 $\pm$ 6.15	62.5 $\pm$ 7.02	61.52 $\pm$ 10.52	44.97 $\pm$ 8.5
			P=0.203	P=0.561	P=0.811	P=0.237

* Statistically significant.
[†] Duration in months

Table 3: Pearson's correlation between continuous sociodemographic variables and disease-related variables with the WHOQOL-BREF dimensions of HD and transplant (TP) patients.

	Physical health		Psychological health		Social relationship		Environmental domain	
	HD	TP	HD	TP	HD	TP	HD	TP
Gender	0.048 P=0.742	-0.213 P=0.138	0.035 P=0.807	-0.03 P=0.835	-0.174 P=0.228	0.051 P=0.723	-0.01 P=0.946	0.132 P=0.362
Age	-0.087 P=0.55	0.078 P=0.590	0.136 P=0.346	-0.004 P=0.976	-0.255 P=0.073	-0.011 P=0.939	0.197 P=0.170	0.154 P=0.285
Education	-0.111 P=0.55	0.115 P=0.426	-0.242 P=0.091	0.118 P=0.415	0.119 P=0.412	-0.218 P=0.128	-0.087 P=0.549	0.235 P=0.101
Marital status	-0.002 P=0.987	-0.288 P=0.042*	0.059 P=0.686	-0.281 P=0.048*	0.063 P=0.666	-0.129 P=0.371	0.067 P=0.642	-0.124 P=0.390
Duration	0.053 P=0.716	-0.11 P=0.941	-0.22 P=0.125	0.139 P=0.334	0.234 P=0.101	-0.017 P=0.909	-0.153 P=0.289	0.216 P=0.132
Residential area	-0.003 P=0.983	0.194 P=0.178	-0.215 P=0.134	0.224 P=0.118	-0.077 P=0.597	0.015 P=0.918	-0.012 P=0.932	0.017 P=0.906
Family history	-0.06 P=0.681	-0.127 P=0.381	-0.092 P=0.526	-0.141 P=0.327	0.012 P=0.934	-0.101 P=0.486	-0.218 P=0.129	-0.258 P=0.070

**: Correlation is significant at the 0.01 level (two-tailed), *: Correlation is significant at the 0.05 level (two-tailed). TP: Transplantation, HD: Haemodialysis.

that for widowed patients and the lowest physical factor value is for divorced patients) (table 3).

DISCUSSION

The results of the current study showed that QOL of haemodialysis patients was found to be significantly ($P < 0.05$) impaired in comparison to the QOL of renal transplant patients in which haemodialysis patients scored significantly ($P < 0.05$) lower QOL scores in all four dimensions of the WHOQOL-BREF questionnaire compared to renal transplant patients, Table 1.

A significant increase in QOL in physical domain in kidney transplant patients can be explained by an improvement in all aspects that encompass the physical domain.¹²

There are many reasons for the improvement in psychological domain of QOL after renal transplantation. Compared to those on haemodialysis, the transplant recipients get more freedom from dependence to a machine, changes in the strict dietary controls and fluid intake and have less anaemia, fatigue, sleep and appetite disorders.¹³

A successful kidney transplant has a positive impact on perceived health status and brings forth promises of an extended, enhanced QOL and a sense of personal liberation by raising the self-esteem due to the empowerment bestowed.¹⁴

This finding was supported by Mollaoglu (2004) who found that two third of ESRD patients in Turkey had depression and found an association between depressed mood and health-related QOL.¹⁵

This study showed a significant increase in QOL in the social domain in kidney transplant patients. Findings of the present study was consistent with that reported by Suet-Ching (2001) who found that social support was impaired and social activities were limited to conserve energy in haemodialysis patients.¹⁷ Patel et al in 2005 found that perceived social support was correlated with decreased depression, increased QOL, increased compliance, and increased satisfaction with care provided.¹⁸

This study showed that the female haemodialysis patients reported significantly lower QOL scores in the social domains. In many communities in the developing world, women are discriminated against, have limited support, and have limited access to health care and educational opportunities.¹⁰ This result disagreed with that of Kimmel et al in 2001.¹⁹

This study showed a significant increase in QOL in the environmental domain in kidney transplant patients. Similar results have been reported by other studies which evaluate the QOL in haemodialysis and kidney transplant patients.^{14, 16}

Also, dissatisfaction with health services may reflect the burden experienced by these

patients, including stressful conditions during the dialysis procedure, high frequency of received in-center treatment and prolonged wait-time in the unit.²⁰

The study showed that there were negative correlations between increasing the value of physical factors and psychological factors with marital status of transplant patients (table 3). A possible explanation for this result was that the single participants had less responsibilities compared with married dialysis patients. Therefore, this reduces the psychosocial burdens of the disease.²¹

CONCLUSION

Patients who undergo kidney transplantation have a significantly better QOL than those who continue on maintenance haemodialysis. This indicated that transplantation had a positive impact and changed the perception of these patients. Female haemodialysis patients reported significantly lower QOL scores in the social domains compared to the male haemodialysis patients.

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Abbreviation list: End stage Renal disease (ESRD), Haemodialysis (HD), Quality Of Life (QOL), Renal Replacement Therapy (RRT), Renal Transplantation (RT), Transplantation (TP), World Health Organization (WHO).

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