ORIGINAL ARTICLE

QUALITY OF LIFE AMONG HAEMODIALYSIS PATIENTS IN A DIALYSIS CENTRE IN THE NORTHERN REGION OF SARAWAK.

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Abstract

Background: Haemodialysis has been known to affect the patient's quality of life (QOL). The procedure may affect the social life and economic status of the sufferer.
Aim: To determine the quality of life among haemodialysis patient at Northern Region of Sarawak.
Methodology: The cross-sectional study was conducted among 100 chronic renal failure patients registered at the haemodialysis centre at Miri Red Crescent Dialysis Centre in Northern Region of Sarawak. Their quality of life (QOL) was measured using Kidney Disease Quality of Life-Short Form (KDQOL-SF) instrument, which measures the disease, physical and mental components of QOL.
Results: Overall score for three components of the KDQOL-SF was 69.1. The score of each component were 66.3, 52.6, and 39.4 respectively. There were statistically significant association between marital status and physical health component (P=0.046); age and physical health component (P=0.026); educational level and mental health component (P=0.006).
Conclusion: In general, QOL of patients on dialysis in this centre was good. Most of the patients had better quality of life in the kidney disease component, and mental health component, despite of having poor quality of life in the physical health component. QOL of patients will be better if they got encouragement from dialysis staff in the Centre, getting strong social support from the family and if they actively involved in social function.

Keywords: Chronic Kidney Disease, Haemodialysis, QOL, KDQOL-SF, Sarawak.

Introduction

Haemodialysis is the best treatment modality available currently for the long-term survival of chronic renal failure patients and is able to maintain patients' quality of life at a satisfactory level.[1] Although this is the best treatment available, there are still advantages and disadvantages of using haemodialysis. It restricts the patient's mobility and activity that may affect the patient's quality of life.[2,3,4]

Haemodialysis affects the patient's quality of life (QOL) in many ways. In terms of profession, the procedure may affect their social and economic status, which may result in psychological problems.[5, 6] With increasing incidence of chronic renal failure, there is a necessity to identify the psychological problems among haemodialysis patients.[7,8] The most common psychological problem is depression. It has a negative impact on patients' quality of life and their caregivers, including their social, economic and psychological well-being. Depression may lead to increased frequency of hospitalization, decreased compliance with treatment, decreased mobility, and high mortality rate. Patients on haemodialysis also face difficulties in work, social life and sports. It reduces feelings of autonomy, and self-esteem.[9,10]

Most of patients on dialysis complain of pain as the main symptom. Pain is due to many factors, such as the dialysis process itself or complication of systemic diseases and painful syndromes. Pain due to venepuncture, muscle cramps, and headaches are common after each dialysis treatment.[11,12]

To ensure good compliance to treatment, patients should have acceptable QOL. Better quality of life score is associated with better compliance, low morbidity and mortality among patients. Reduced compliance may be due to psychosocial factors such as immigration, poor family support, financial crisis, and lifelong medications, which lead to high mortality rate.[13,14]

The QOL of chronic renal disease patients has not been widely explored in Malaysia. There is still a need to understand the QOL of different ethnic groups and in different areas of Malaysia. The purpose of this study, therefore, was to assess the quality of life and its determinants among haemodialysis patients in Northern part of Sarawak, Malaysia.

Materials and Methods

The study population included chronic renal failure patients who were on haemodialysis treatment at Miri Red Crescent Dialysis Centre Miri Chapter, and who were willing to participate. Minimum sample size was calculated using Open Epi software assuming 50% of haemodialysis patients will have a good quality of life with a precision of 9% for 95% confidence interval as 86. A total of 100 patients meeting the inclusion criteria were recruited into the study.

In this study, Kidney Disease Quality of Life Instrument Short Form (KDQOL-SF) was used as instrument.[15] This tool is used widely around the world to assess quality of life in kidney disease patients and is able to compare QOL of different groups and geographic areas. This tool has been translated into various languages and validated in many racial groups. It has three components, kidney disease, mental and physical components.

KDQOL-SF questionnaire consists of 90 questions, which includes 9 questions on socio-demographics background, 44 questions on kidney disease component (KDCS), 14 questions on mental health components (MCS), and 23 questions on physical health components (PHS). The kidney disease component includes symptom/problem list (12 items), effects of kidney disease on daily life (8 items), burden of kidney disease (4 items), work status (2 items), cognitive function (4 items), sexual function (2 items), quality of social interaction (3 items), sleep (4 items), social support (2 items), dialysis

staff encouragement (2 items), and patient satisfaction (1 item). The mental health component includes energy/fatigue (4 items), social functioning (2 items), role emotional (5 items), and emotional well-being (3 items). The physical health component includes physical functioning (10 items), role physical (4 items), bodily pain (2 items), and general health (5 items). The data collected from patients was kept anonymous and confidential to respect human dignity and privacy. The informed consent was obtained from each patient before collecting the data. Permission from Institutional Ethical Committee of Royal College of Medicine Perak was obtained prior to the study.

The data was keyed into the excel-spread sheet of KDQOL-SFTM, version 1.3 Scoring Program (v3.0), for scoring of each component in the questionnaire. Each component is scored as 0-100, with a higher score indicating better quality of life. Data was analysed using SPSS version 17.0. Descriptive statistics, cross tabulation analysis, independent T-test, ANOVA test and correlation test were used to analyse the data. Level of statistical significance was fixed at < 0.05.

Results

Socio-demographic profiles of the patients.

Out of 100 patients participated, 99 had completed data. Data for one patient was missing and was excluded from analysis. According to table 1.0, male contributed 53.3% of the total population. Highest number of patients were above the age of 60 years (39.4%). This is associated with the highest number of diabetes mellitus cases among the elderly that is the main cause of chronic renal failure in Malaysia. Among ethnic groups, Iban contributed the highest percentage which was 30.3% of the total patients. Most of the respondents were married (74.7%) and 54.5% received their education at primary school level and below.

According to the distance range from home, 51.5% of them were having 1 to 10 Km distance to dialysis centre, whilst 21.2% lived more than 30 km or more. The main cause of renal failure among respondents was diabetes mellitus (43.4%), followed by hypertension (30.3%), and others causes (26.3%). Duration of treatment in most of the patients was 1-5 years (58.6%).

QOL Score

The mean total score of the KDQOL-SF was 69.1 ± 16.5, while the mean for KDCS, MCS, and PCS were 66.3 ± 11.20, 52.6 ± 8.8, and 39.4 ± 9.3 respectively (Table 2.0). For KDCS, dialysis staff encouragement (86.6 ± 18.3) had the highest score, while burden of kidney disease (39.8 ± 28.4) had the lowest score. For MCS, social function (84.6 ± 17.1) had the highest score, while energy/fatigue (60.7 ± 18.2) had the lowest score. For PCS, pain (77.2 ± 27.1) had the highest score, while role limitation-physical (27.0 ± 29.4) had the lowest score. The total score of KDCS, MCS and PCS were classified into good and poor score with the cut-off point at 50. It was found that 93.9% of patients had a good score with KDCS, 65.7% with MCS but only 15.2% with PCS.

Association between socio-demographics characteristics and QOL

No significant association was found between KDCS and all the sociodemographic factors under study. There was a significant association between MCS and education level (P=0.006). Patients with education level above the primary school had better MCS. For PCS, age and marital status were significantly associated with it. Younger patients (less than 40) had significantly better PCS score as compared to older ones (P=0.026). The single and divorced patient had better PCS as compared to the married and the widowed (p=0.046).

Correlation between KDCS, MCS, and PCS score There was a statistically significant positive correlation between kidney disease component, and mental health component (p=0.026). Similar relationship was found between kidney disease component, and physical health component (p=0.000). However, correlation between mental

health component and physical health component was not statistically significant (p=0.051).

Discussion

Iban contributed the highest number of patients in this study (30%). Generally, most of the patients in this centre had good score for kidney disease and mental health component but poor score for physical health component. This finding is consistent with findings from a study done in Hospital Kuala Lumpur.[16] Higher scores were seen in "dialysis staff encouragement", "social support", and "social function" domain. Lower score was seen in "burden of kidney diseases", and "role limitation-physical" domain. It means that QOL of patients will be good if they get encouragement from dialysis staff in the centre, get strong social support from the family and if they are actively involved in social function. Their QOL would get worse if the kidney disease deteriorated and they limited their daily activity. In Al-Jumaih's study, patients were also found to have higher score in the "dialysis staff encouragement", and lower score in the "role limitation-physical" domain.[17] In the current study, the sexual function domain scored high, but this may not reflect the true status of the patients as only a few of them had responded to the question.

In this study, it was shown that females showed better quality of life for physical health component. The finding was inconsistent with the study by Lemos et al. study in which females had lower physical health component score than males.[18] The difference of score between genders in physical health components was small and not statistically significant. Another study done in Saudi Arabia using the same instrument found that there was a statistically significant association between genders and score for all three components; males had a better quality of life in the three components.[17]

According to age category, patients in all age groups had good score for kidney disease component. For mental health component, patients below 30 years old age scored poorly. This was similar to AL-Jumaih's study where patients aged less than 40 years had a better score in the physical health component.[17] It was found that younger age groups had significantly better quality of life in terms of physical health components (P=0.026)

All patients had good score of KDCS regardless of their marital status. In mental health component, patients who were married (53.4) and divorced (50.4) scored better than patients who were single (48.5), and widowed (48.5): although it was not significant statistically. In AL-Jumaih's study, married respondent tended to score better in the kidney disease component.[17] In the physical health component, patients who were single, and divorced had significantly better score than patients who were married, and widowed (P=0.046).

Patients who had education more than primary school level have better score in kidney disease component (60.0), mental health component (55.2), and physical health component (40.5) and it was statistically significant in mental health component (P=0.006).

Conclusion

In this study, socio-demographics had an impact on the patient's quality of life. Although, in general most of the patients in this centre had good score for kidney disease and mental health component, they scored poorly for physical health component. Patients' QOL would be better if they got encouragement from dialysis staff in the centre, got strong social support from the family and were actively involved in social function. Their QOL got worse if the kidney disease deteriorated and their daily activity became limited. Young patients seemed to have significantly better quality of life in term of physical health and patients with high education level had better quality of life in mental health.

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Table 1: The sociodemographic profiles

Socio-demographic characteristics	frequency	percentage (%)
Age		
Less than 30 years old	4.0	4.0
30-39 years old	7.0	7.1
40-49 years old	22.0	22.0
50-59 years old	27.0	27.3
60 years old and above	39.0	39.4
Gender		
Male	53	53.5
Female	46	46.5
Ethnic groups		
Iban	30	30.3
Malay	25	25.3
Chinese	21	21.2
Melanau	5	5.1
Orang Hulu	12	12.1
Others	6	6.1
Marital status		
Married	74	74.7
Single	10	10.1
Widowed	10	10.1
Divorced	5	5.0
Educational level		
Primary school and below	54	54.5
Above primary school	45	45.5
Distance from home to dialysis centre		
1-10 km	51	51.5
11-20 km	23	23.2
21-30 km	4	4.0
31 km and above	21	21.2
Duration of dialysis		
Less than one year	10	10.1
1-5 years	58	58.6
6-10 years	22	22.2
More than 10 years	9	9.1
Cause of renal failure		
Diabetes mellitus	43	43.4
Hypertension	30	30.3
Others	26	26.3

Table 2: The mean score for each component of the 'Kidney Disease Quality of Life - Short Form' (KDQOL-SF) instrument.

	N	Score*mean ± SD
KDCS	99	66.3 ± 11.2
Symptom/Problem list	99	77.3 ± 13.4
Effect of Kidney Disease on Daily Life	99	68.0 ± 15.6
Burden of Kidney Disease	99	39.8 ± 28.4
Cognitive Function	99	58.9 ± 20.2
Work Status	99	42.9 ± 31.9
Sexual Function	21	64.3 ± 29.9
Quality of Social Interaction	99	76.5 ± 17.9
Sleep	99	63.4 ± 18.2
Social Support	99	81.6 ± 25.9
Dialysis Staff Encouragement	99	86.6 ± 18.3
Patient Satisfaction	99	69.7 ± 22.6
MCS	99	52.6 ± 8.8
Energy/Fatigue	99	60.7 ± 18.2
Social Function	99	84.6 ± 17.1
Role Limitation-Emotional	99	69.4 ± 42.2
Emotional Well-being	99	75.6 ± 15.2
PCS	99	39.4 ± 9.3
Physical Functioning	99	59.8 ± 30.3
Role limitation-Physical	99	27.0 ± 29.4
Pain	99	77.2 ± 27.1
General Health	99	63.3 ± 17.8
Overall Score	99	69.1 ± 16.5

KDCS: Kidney Disease Component Summaries; MCS: Mental Health Component Summaries; PCS: Physical Health Component Summaries. *Score ranges from 0-100, with higher score indicating better quality of life.

Table 3: Factors related to quality of life in haemodialysis patients.

	KDCS Score	P-value	MCS Score	P-value	PCS Score	P-value
Gender						
Male	66.51	0.873	53.86	0.129	38.70	0.407
Female	66.15		51.17		40.26	
Age						
Less than 30 years old	64.02	0.269	49.36	0.429	40.78	0.026*
30-39 years old	68.73		53.48		43.16	
40-49 years old	70.70		55.14		36.14	
50-59 years old	64.33		50.59		38.25	
60 years old and above	65.08		52.61		39.43	
Marital Status						
Married	66.21	0.175	53.89	0.095	38.34	0.046*
Single	69.95		48.46		45.61	
Widowed	60.72		48.49		38.17	
Divorced	72.24		50.35		45.67	
Educational Level						
Primary school and below	64.97	0.183	50.43	0.006*	38.50	0.282
Secondary school and above	67.99		55.24		40.53	
Distance from Home to Dialysis Centre						
1-10 Km	69.17	0.058	52.16	0.936	39.74	0.872
11-20 Km	64.60		52.99		39.46	
21-30 Km	64.02		54.23		41.88	
31 Km and above	61.83		53.14		38.17	
Cause of Renal Failure						
Diabetes mellitus	66.54	0.848	53.21	0.682	38.88	0.307
Hypertension	65.41		52.87		38.17	
Others	67.08		51.33		41.79	
Years Been on Dialysis						
Less than 1 year	67.60	0.412	53.04	0.860	36.62	0.317
1-5 years	65.29		52.14		39.54	
6-10 years	69.56		52.77		41.79	
11 years and above	63.84		54.82		36.01	

KDCS: Kidney Disease Component Summaries; MCS: Mental Health Component Summaries; PCS: Physical Health Component Summaries. *Statistically significant (P-value<0.05)

Table 4: Correlation between KDCS, MCS, and PCS score.

Correlated variables	p value (0.05 is significant)
KDCS and MCS	0.026
KDCS and PCS	0.000
PCS and MCS	0.051 (NS)

KDCS: Kidney Disease Component score; MCS: Mental Health Component score; PCS: Physical Health Component score.

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