ORIGINAL RESEARCH

Health-Related Quality of Life Among Out-Patient End-Stage Renal Disease (ESRD) Patients on Maintenance Hemodialysis in Manila Doctors Hospital*

Allison Therese T. Chua, MD

End stage renal disease is one of the alarming complications of chronic kidney disease that leads to maintenance hemodialysis which greatly affects the quality of life of the patients.

Objective: To describe and compare the overall quality of life scores of out-patient ESRD patients undergoing maintenance hemodialysis between Hemodialysis Unit I and Hemodialysis Unit II in Manila Doctors Hospital from July to August 2017.

Materials and Methods: The study was a cross sectional study which used a validated English and Filipino versions of the Kidney Disease and Quality of Life Short Form (KDQOL – SF^{tm}) survey. Descriptive statistics were used for quantitative variables while counts and proportions for qualitative variables. Chi square test or Fishers exact probability test was used for the differences in socio- demographic characteristics while independent t-test was employed for the quality of life scores between units. Seventy four ESRD patients participated in the study.

Results: For the individual scores, both units have equal proportions of good, moderate and poor quality of life in the physical component. However, in the emotional component, Hemodialysis Unit 1 patients had good quality of life while those in Hemodialysis Unit 2 had poor to moderate quality of life. In the kidney disease component, Hemodialysis Unit 1 patients had poor to moderate quality of life while Unit 2 patients had good quality of life.

Conclusion: Overall, Hemodialysis Unit 2 patients had poor quality of life while Hemodialysis Unit 1 patients had moderate quality of life. Further studies may be done in other private and government hospitals around Manila including dialysis centers. Multi-centered comparisons may also be made either between multiple government hospitals, between multiple private hospitals or between private and government hospitals.

Key words: End stage renal disease, health-related quality of life, maintenance hemodialysis

Introduction

Quality of Life (QOL) has multiple aspects with a very broad subject depending on the one's point of view. The World Health Organization (WHO) defines "Quality of life as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."[1] While the Centers for Disease Control and Prevention (CDC) defines it as "a broad multidimensional concept that usually includes

* From the Department of Family and Community Medicine, Manila Doctors Hospital

subjective evaluations of both positive and negative aspects of life".[2] QOL are usually applied to those who are suffering from chronic diseases with debilitating complications such as diabetes, cancer and even arthritis. CDC also defines "Health Related Quality of (HRQoL) as a an individual's or group's perceived physical and mental health overtime"[2]

As of 2013, the Department of Health (DOH) reported that approximately 23,000 patients were undergoing dialysis treatment, 4 times higher than the cases recorded back in 2004 or a 10-15 percent increase per year. The National Kidney and Transplant Institute (NKTI) website reported that ESRD is the 7th leading cause of death in the country.[3] The top 3 most common causes of ESRD here in the Philippines are the following: hypertension, diabetes and glomerulonephritis in which the first two entities comprise the 60% of dialysis patients.[4]

The medical literature has recognized the importance of patients' quality of life. According to Al Jumaih, et al. "better QOL scores have been found to be associated with better compliance and reduced morbidity and mortality".[5] Different tools had been used to assess the quality of life of patients. Kidney Disease Quality of Life Instrument – Short Form (KDQOL – SF) is one of them and has been widely used to assess the QOL of ESRD patients. This assessment tool has been translated into different languages including Filipino. There are very limited studies when it comes to the quality of life of Filipino ESRD patients. According to a study done by Torres (2013), "the level of health-related quality of life among respondents in Southern Philippines Medical Center (SPMC), a government tertiary hospital, was poor in terms of physical component, mental component and kidney component summary scores. However, the overall health rating was good".[6] This study aims to measure the health related quality of life among ESRD patients in a private tertiary hospital.

Numerous international publications were already done focusing on ESRD patients on maintenance hemodialysis specifically focusing on their quality of life. These studies showed how markedly impaired their lives become because of the symptoms and the complications that arise from the disease. In the Philippine medical literature, limited studies had been done and mostly, in government hospitals, which frequently cater Filipinos with limited funds to support their pre-hemodialysis laboratory workups, maintenance hemodialysis and medications.

Family physicians employed the qualities of a five star physician – health care providers, counselors, educators, researchers and community leaders. Patients suffering from chronic and debilitating diseases need lifelong counseling and constant communication not only to boost their self esteem but to reiterate to them that affliction with such diseases does not necessarily mean that it would be a lifelong suffering. As family physicians, it is one of their duties to counsel such patients. This study will be able to show the quality of life among Filipino ESRD patients and the impact that maintenance dialysis has done to their daily activities. This study will be able to specify which functional status the ESRD patients on maintenance hemodialysis are affected the most. Once identified, the counselling will be most focused on the identified functional status that was most affected. Overall, programs can be developed to help ease the burden of the disease physically, emotionally and socially.

The objective of the study was to describe and compare the overall quality of life scores of out- patient ESRD patients undergoing maintenance hemodialysis between Hemodialysis Unit I and Hemodialysis Unit II in Manila Doctors Hospital from July to August 2017.

Materials and Methods

The validated English and Filipino versions of the Kidney Disease and Quality of Life Short Form (KDQOL – SF™) survey were distributed among ESRD patients in the Hemodialysis Units 1 and 2 of Manila Doctors Hospital. The participants of the study were given the option to choose whether to answer the Filipino version or the English version.

The objective and protocol of the study were explained to all participants and a written consent was obtained from them. Confidentiality was ensured as well. The participants were given the option to either answer the survey prior to their hemodialysis, during dialysis or to take home the survey. The surveys were answered by the patients with the help of their relatives or the researcher herself.

The study design was a single center, cross sectional study. There was no sampling design because it was not applicable on the study since the total enumeration of the ESRD patients who fit the inclusion criteria with consent, had answered the survey during the months of July to August 2017. The target population was known ESRD patients for at least 3 months, on maintenance hemodialysis requiring at least 2 times a week, who were undergoing their procedures in the Hemodialysis Units of Manila Doctors Hospital from July to August 2017.

The inclusion criteria were the following: OPD patients who were known ESRD during the time of the interview or/and the distribution of the survey, $\geq$ 19 years old, Undergoing Hemodialysis at the Hemodialysis Unit I and II of Manila Doctors Hospital, patients who were able to completely understand and provide answers to the items on the questionnaire either in English or Filipino and with written informed consent. The exclusion criteria were as follow: $\leq$ 18 years old, ESRD patients who were in uremic state and unstable, inpatients, those who were with cognitive impairment and/or dementia, diagnosed with acute kidney injury, underwent major surgery for the last 3 months, foreigner and dialysis parameters such as type of dialysis, duration of dialysis, laboratory exams

Data were analyzed using Stata version 13 software. Frequency tables were generated to show the distribution of patients according to socio-demographic variables (gender, age groups, level of education, civil status, employment status, total household income and type of health insurance) and primary cause of end stage renal disease. Descriptive statistics entailed use of mean and standard deviation with coefficient of variation for quantitative variables and counts and proportions for qualitative variables. To determine differences in socio-demographic characteristics and primary cause of illness between hemodialysis units, Chi square test was utilized or Fishers exact probability test when applicable. To determine differences in quality of life scores between hemodialysis units by components (physical, emotional and kidney disease) and overall, independent t-test was used. Pearson's product moment correlation was used to determine the correlation between the components of quality of life scores (kidney disease, physical and mental). A p-value <0.05 was used as cut-off for significance.

Results and Discussion

A total of 74 patients with ESRD participated in the study, 61% from hemodialysis unit 1 and 39% from hemodialysis unit 2. There were more males in hemodialysis unit 1 (51%) and more females in hemodialysis unit 2 (55%) but the difference was not significant ($p=0.5975$). Majority were more than 60 years of age and an increasing trend in the proportion affected can be observed as age increases. Most have attained a college degree, were married and previously employed (retired/ disabled). The usual household income ranged from Php <20,000 to 40,000. Health insurance was predominantly through Philhealth. Among the primary causes of ESRD, Diabetes mellitus and Hypertension ranked highest which resembled the data gathered by the National Kidney Transplant Institute (NKTI). There were no significant differences in the distribution of socio-demographic variables and primary causes for ESRD between kidney patients in hemodialysis units 1 and 2 (p-value >0.05) (Table 1)

As to physical functioning, activities were limited a little as a result of the health problem in terms of the amount, time, type and effort in accomplishing one's work. Mild pain was experienced during the past 4 weeks which interfered moderately with normal work. Generally, health is good and almost the same a year ago (Table 2).

With regards to emotional well-being, feeling down, nervous and sad occurred a little of the time while feeling

Table 1. Profile of patients.

Socio-demographic characteristics	Hemodialysis Unit 1 n=45 No. (%)	Hemodialysis Unit 2 n=29 No. (%)	Total	p- value
Gender				0.5975
Male	23 (51.1)	13 (44.8)	36	
Female	22 (48.9)	16 (55.2)	38	
Age group in years				
<40	4 (8.9)	2 (6.9)	6	1.0000+
41-50	4 (8.9)	5 (17.2)	9	0.3015 +
51-60	12 (26.7)	6 (20.7)	18	0.5585
>60	25 (55.5)	16 (55.2)	41	0.8359
Level of education				
Elementary	1 (2.2)	2 (6.9)	3	0.5571 +
Highschool	5 (11.1)	4 (13.8)	9	0.4758 +
College	32 (71.1)	21 (72.4)	54	0.9034
Postgraduate	7 (15.6)	2 (6.9)	9	0.4682 +
Civil status				0.6975 +
Single	5 (11.1)	2 (6.9)	7	
Married	40 (88.9)	27 (93.1)	67	
Employment status				
Currently employed	11 (24.4)	7 (24.1)	18	0.9761
Previously employed	28 (62.2)	14 (48.3)	42	0.2371
Unemployed	6 (13.3)	8 (27.6)	14	0.1264
Total household income (PhP)				
<20,000	11 (27.5)	6 (26.1)	18	0.9032
20,001-40,000	10 (25.0)	8 (34.8)	18	0.4079
40,001-70,000	11 (27.5)	3 (13.0)	14	0.1839
>70,000	8 (20.0)	6 (26.1)	14	0.5758
Type of health insurance				
None	0	1 (3.5)	1	0.3919 +
Philhealth	31 (68.9)	17 (58.6)	48	0.3664
Private	1 (2.2)	4 (13.8)	5	0.0737 +
Both Philhealth and private	13 (28.9)	7 (24.1)	20	0.6532
Primary Cause of ESRD				
Diabetes mellitus (DM)	18 (40.0)	16 (55.2)	34	0.3867
Hypertension (HPN)	19 (42.2)	10 (34.5)	29	0.3426
Chronic Glomerulonephritis	1 (2.2)	1 (3.4)	2	1.0000 +
Others	10 (22.2)	7 (24.1)	17	0.9785
Kidney stones	2	2		
NSAID use	2	2		
Contrast use		1		

Chi square test
+Fishers exact probability test

happy and calm occurred a good bit to most of the time during the past 4 weeks. With these emotional problems, the quality, amount and time spent on work were somehow affected and interfered moderately with social activities. Although on the average, there was pep and energy a good bit of the time and being worn out and tired was felt only some of the time (Table 2).

During the past 4 weeks, constitutional symptoms (eg. muscle cramps, chest pains, skin irritation, etc.) as well as the effects of kidney disease in terms of fluid and diet restrictions, ability to work and travel, personal appearance, among others have been bothersome. The disease condition as being interfering, time consuming, frustrating and burdensome to one and one's family was somehow true. Cognition-wise, slow reaction to things said or done, difficulty in concentrating or thinking and becoming confused was felt some of the time. Isolating oneself and irritability to those around was felt some to a good bit of the time. Conversely, getting along well with other people happened also some to a good bit of the

Table 2. Comparison of quality of life scores between hemodialysis units.

Components	Hemodialysis Unit 1 n= 45 No. (%)		Hemodialysis Unit 2 n= 29 No. (%)		p-value‡
	Mean,sd	CV	Mean, sd	CV	
Physical					
Physical functioning	53.9, 26.1	0.48	47.9, 24.5	0.51	0.3285
Role limitations - physical	18.9, 32.0	1.70	23.3, 32.7	1.40	0.5702
Pain	66.6, 28.9	0.43	64.8, 24.3	0.38	0.7843
General health	51.4, 18.5	0.36	46.0, 23.4	0.51	0.2722
Total	47.7, 18.0	0.38	45.5, 19.5	0.43	0.6215
Emotional					
Emotional well-being	77.4, 15.3	0.20	77.5, 17.1	0.22	0.9801
Role limitations - emotional	47.4, 42.9	0.91	37.9, 44.3	1.17	0.3629
Social function	50.0, 25.0	0.50	45.7, 27.0	0.59	0.4851
Energy/fatigue	63.0, 18.4	0.29	50.8, 14.0	0.28	0.0034
Total	59.5, 18.3	0.31	53,0, 3.4	0.34	0.1422
Kidney Disease					
Symptoms/problem list	78.9, 15.3	0.19	75.7, 15.4	0.20	0.3795
Effects of kidney disease	69.1, 21.4	0.31	63.6, 22.2	0.35	0.2898
Burden of kidney disease	40.4, 27.6	0.68	35.3, 25.2	0.71	0.4280
Work status	46.7, 30.9	0.66	50.0, 23.1	0.46	0.6203
Cognitive function	50.1, 34.3	0.68	60.2, 35.8	0.59	0.2256
Quality of social interaction	50.2, 34.4	0.68	52.4, 34.6	0.66	0.7903
Sexual function (n=3)	73.6, 26.1	0.35	80.6, 34.9	0.43	0.6389
Sleep	55.0, 18.4	0.33	55.3, 15.6	0.28	0.9338
Social support	90.7, 14.9	0.16	85.1, 18.0	0.21	0.1444
Dialysis staff encouragement	81.1, 20.6	0.25	78.4, 23.8	0.30	0.6112
Overall health	60.7, 14.7	0.24	56.2, 11.5	0.20	0.1703
Patient satisfaction	63.7, 13.9	0.22	69.5, 14.1	0.20	0.0840
Total	58.4, 9.4	0.16	58.9, 9.1	0.15	0.8366

‡Independent t-test

time. Sexual activity was not considered a problem. Sleep problems, such as, getting the needed amount, trouble going back to sleep after being awakened at night or staying awake during the day have been encountered some to a good bit of the time. The amount of time spent and support from family and friends were highly satisfactory. Support and encouragement from the dialysis staff was mostly to definitely true. Overall, health was rated halfway between worst and best. Satisfaction with the care received for kidney dialysis was rated as very good (Table 2).

There were no significant differences ($p>0.05$) in the mean quality of life scores between hemodialysis units on the physical and kidney disease components on a per dimension and overall basis. There was, however, a significant difference in the mean quality of life score for the energy/fatigue dimension of the emotional component ($p=0.0034$). The score was higher among hemodialysis unit 1 patients. The rest of the dimensions under the emotional component showed no significant differences in quality of life scores. There is no indication of marked variability in the scores between units as indicated by the values of the coefficient of variation. As such, overall quality of life can be considered similar for both units (Table 2)

In lieu of standard cut-off values to categorize quality of life, 50% of the observed scores were arbitrarily assigned as moderate. Those whose scores fell below 25% of the distribution were considered as having poor quality of life while those whose scores fell above 75% of the distribution were deemed to have good quality of life. For the physical component, there was an equal proportion of patients having poor, moderate and good quality of life between hemodialysis units. Hence, there were no significant differences in the physical quality of life of patients between the two hemodialysis units ($p=0.999$). For the emotional component, a higher percentage of patients under hemodialysis unit 2 had poor quality of life (31%) while it was good quality of life (28.9%) for those under unit1 but the differences were not significant ($p=0.393$). There was an equal proportion of moderate quality of life between units. For the kidney disease component, the proportion of patients with poor (26.7%) to moderate (53.3%) quality of life was higher for those in unit 1 but the proportion with good quality of life was higher for those in unit 2 but the differences were not significant ($p=0.541$). Overall, poor quality of life was higher among those in unit 2 while moderate quality of life was higher among those in unit 1. Quality of life was similarly good for both groups. There were no significant differences ($p=0.528$) in the overall quality of life between patients in the two hemodialysis units (Table 3).

Table 3. Comparison of the quality of life between hemodialysis units.

Components	Hemodialysis Unit 1 n=45 No. (%)	Hemodialysis Unit 2 n=29 No. (%)	p-value
Physical			0.999
Poor	11 (24.4)	7 (24.1)	
Moderate	23 (51.1)	15 (51.7)	
Good	11 (24.4)	7 (24.1)	
Emotional			0.393
Poor	9 (20.0)	9 (31.0)	
Moderate	23 (51.1)	15 (51.7)	
Good	13 (28.9)	5 (17.2)	
Kidney Disease			0.541
Poor	12 (26.7)	6 (20.7)	
Moderate	24 (53.3)	14 (48.3)	
Good	9 (20.0)	9 (31.0)	
Overall			0.528
Poor	9 (20.0)	9 (31.0)	
Moderate	25 (55.6)	13 (44.8)	
Good	11 (24.4)	7 (24.1)	

Chi square test

Limitations were observed during the duration of the research. For instance, spiritual and religious dimensions were not measured despite their greatly effects on their quality of life. Another limitation was the duration of their

illnesses. Some participants encountered were diagnosed with ESRD and undergoing dialysis already for as short as 6 months while some were undergoing dialysis for as long as 15 years. Some patients were already well adjusted with their current condition while some were still struggling which could also affect their point of view about their quality of life. Another limitation was, this study included patients who were out patient at the time of the survey/ interview but may possibly be admitted on the latter time of the study.

Conclusion

There were more males in hemodialysis unit 1 but more females in hemodialysis unit 2. Most of them were more than 60 years of age, college degree holders, married and were previously employed. The primary causes of ESRD were diabetes mellitus and hypertension. In terms of their scores in each dimension, both units have equal proportion of good, moderate and poor quality of life in the physical component. However, in the emotional component, patients in Hemodialysis unit 1 had good quality of life while those in Hemodialysis Unit 2 had poor to moderate quality of life. In the kidney disease component, patients in Hemodialysis Unit 1 had poor to moderate quality of life while patients in Hemodialysis Unit 2 had good quality of life. In their overall scores, patients in Hemodialysis Unit 2 had poor quality of life while patients in Hemodialysis Unit 1 had moderate quality of life. Though there was no significant differences in the 3 components and the overall scores between the 2 units. Among the domains, both the emotional and kidney disease components were affected the most. As family physicians acting as counselors, one may start to monitor these aspects which will lead to a more patient centered care and improve the health and well-being of ESRD patients.

The study showed that in this study population, there were similarities in the scores between a government tertiary hospital and a private tertiary hospital. It can be deduced that regardless of the economic and financial status of ESRD patients, their quality of life is still greatly affected in the majority of them. In the Philippine medical literature, studies were done mostly in a single center setting. Therefore, it can be recommended that further studies be done in other private and government hospitals around Manila including dialysis centers. Multi-centered comparisons may also be made either between multiple government hospitals, between multiple private hospitals or between private and government hospitals. The study may even be widened to include localities in Metro Manila and to the nearby provinces as done in other countries.

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