

Effect of Counseling on Health Related Quality of Life on Haemodialysis Patients

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Abstract

End stage renal disease affects two million patients worldwide. Health related quality of life (HRQoL) has recently become a major indicator of health and well-being of patients with kidney disease. The present goal for the treatment of patients with ESRD is not simply to prolong life, but also to provide a better HRQoL. This goal can be achieved through patient counseling. A simple prospective study was used to examine the effect of patient counseling on HRQoL of hemodialysis patients. In the study, a Short Form-36 (SF-36) questionnaire and clinical parameters were used for 52 hemodialysis patients to assess the HRQoL before and after patient counseling. All the Patients were kept under observation for a period of three months to study the effect of patient counseling. After three months period of counseling a significant ($p < 0.05$) improvement was observed for hemodialysis patients. Also HRQoL score was higher for hemodialysis patients after counseling. This study concluded that knowledge of the disease and its management through patient counseling could improve the HRQoL of hemodialysis patients.

Key words: Chronic renal failure, patient education, quality life improvement

Pengaruh Konseling terhadap *Health Related Quality of Life* pada Pasien Hemodialisis

Abstrak

Penyakit ginjal pada stadium akhir (*End Stage Renal Disease/ESDR*) memengaruhi dua juta pasien di seluruh dunia. Saat ini *health related quality of life (HRQoL)* telah menjadi indikator utama kesehatan dan kesejahteraan pasien dengan penyakit ginjal. Tujuan pengobatan pasien ESDR tidak hanya untuk memperpanjang usia harapan hidup namun juga untuk menyediakan HRQoL yang lebih baik. Tujuan ini dapat dicapai melalui konseling pasien. Sebuah studi prospektif dilakukan untuk menguji pengaruh dari konseling pasien pada HRQOL dari pasien hemodialisis. Dalam studi ini, sebuah kuesioner *Short Form-36 (SF-36)* dan parameter klinik digunakan pada 52 pasien hemodialisis untuk menilai HRQOL sebelum dan sesudah konseling. Seluruh pasien diamati dalam jangka waktu tiga bulan untuk mempelajari pengaruh konseling tersebut. Setelah tiga bulan proses konseling diperoleh peningkatan nilai HRQoL yang signifikan ($p < 0,05$) pada pasien hemodialisis. Penelitian ini menyimpulkan bahwa pengetahuan tentang penyakit dan manajemen melalui konseling pasien bisa meningkatkan HRQoL pada pasien hemodialisis.

Kata kunci: Gagal ginjal kronis, edukasi pasien, peningkatan kualitas hidup

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Introduction

End stage renal disease (ESRD) is a term used when renal replacement therapy is required because the kidney cease to function permanently in most cases as a consequence of another underlying physical disorder (e.g., diabetic nephropathy, hypertensive nephrosclerosis).¹ The disease can have an impact on patients' quality of life (QoL), potentially affecting their physical and mental health, functional status, independence, general well being, personal relationships and social functioning.²

In hemodialysis, the blood is purified by an external artificial kidney machine. Patient's blood is circulated by which blood comes in contact with a specially prepared solution called dialysate. Blood and dialysate are separated by a very thin membrane, which will allow the passage of various molecules. The metabolic waste products and the excess fluid; which a represent in the blood in high concentration move from the blood to the dialysate.

The vital element of the treatment is dietary control. Salt free diet, low potassium containing foods and limited fluid intake are possible interventions and even through protein adds up to uremia, ESRD patients have to consume a high protein diet (i.e., 1–2 mg/kg/day) so as to meet the extra needs for body repair functions and immunity.³

Short Form-36 (SF-36), one of the standard evaluation tools that is used to measure quality of life, is short, practical, and possesses good psychometric properties.⁴ The Short Form health survey SF-36 with 36 questions is a well-documented scoring system that has been widely used and validated as a HRQoL assessment tool for the general population as well as on hemodialysis patients. SF-36 consists of 36 questions, 35 of which are compressed into 8 multi-item scales: (a) physical functioning; (b) role-physical; (c) bodily pain; (d) general health; (e) vitality; (f) social functioning; (g) role-emotional; and (h) mental health.

Health-related quality of life (HRQoL) refers to the measure of a patients functioning, well being and general health perception in each of three domains such as physical, psychological, and social. One of the main reasons for the rapid growth in health related quality of life (HRQoL) measurement is the reorganization of the importance of a better understanding of the impact concerning the health care interventions on the life of the patients.⁵ QoL of ESRD patients are influenced by the disease itself and by the type of replacement therapy. Numerous studies have identified the effect of such factors as anemia, age, comorbidity and depression of QoL.⁶ Goal can be achieved only if pharmacists stress the education component and guide the patients towards more responsible drug use.⁷ The objective of the study was to assess the impact of patient counseling for hemodialysis patients in the aspect of health related quality of life.

Methods

Study design and study site: A simple prospective observational study was carried out for three months period at Tiruvalla Medical Mission Multispecialty Hospital (with 350 beds), Tiruvalla, Kerala, India and St. Thomas Multispecialty Hospital (with 150 beds) Malakkara, Pathanamtitta, Kerala, India.

Study population: The simple prospective intervention study was conducted on 52 hemodialysis patients. Out of 52 patients, 34 were male patients and 18 were female patients. The patients were selected on the basis of inclusion and exclusion criteria.

Inclusion criteria: Inclusion criteria are a set of conditions that must be met in order to participate in a research study. Patients being on dialysis for more than 3 months and above 18 years of age were included in the study.

Exclusion criteria: Exclusion are the standards used to determine whether a person may or may not be allowed to participate in the

study. Patients who were not interested in the study or not consented, those who were withdrawn from the study, HIV or Hepatitis infected patients were excluded from the study.

Study method: Detailed history, clinical findings, investigation and quality of life scoring system were recorded. **Quality of life scoring system:** The SF-36 is a short form of quality of life scoring system. It consists of 36 questions. The SF-36 consists of eight scaled scores, which are the weighted sums of the questions in their section. Each scale is directly transformed into a 0–100 scale on the assumption that each question carries equal weight. There is no single overall score for the SF-36, instead, it generates eight subscales and two summary scores.

The eight sections are: Vitality, physical functioning, bodily pain, general health perceptions, physical role functioning, emotional role functioning, social role functioning, mental health. The summary scores are 1. Physical health (physical functioning, physical role and bodily pain) and 2. Mental health (social functioning, emotional role and mental health). A score between 0 and 100 is then calculated on the basis of well defined guidelines, with a higher score indicating a better state of health.^{8–11}

Data collection and statistical analysis: Informed consent forms were obtained from the patients. SF-36 questionnaire converted into Malayalam version and were given to all hemodialysis patients before patient counseling. Demographic and clinical data value were collected for all patients from the patient's case sheet, patients and their care givers interviews and dialysis chart. The selected patients were given extensive counseling and education regarding the disease, medication, OTC (Over The Counter) drugs, diet, exercise, storage of medication, emotion sharing and problems occurring during and after dialysis. After each 15 days, they were again counseled and thus monitored their HRQoL. The follow up of SF-36 scores and clinical data's such as Hemoglo-

bin (Hb), sodium, potassium, phosphate, urea, creatinine value were obtained after 3 months of counseling.

All the data were analyzed using Graph-Pad Prism Version 6.00 and Microsoft Excel. Analysis was done by student's paired t-test of significance to identify the associations among variables.

Ethical issues: Prior to data collection, a detailed explanation of the aim and objective of the study were given, confidentiality was ensured and consent was obtained.

Results

The main objective of the study was to measure the impact of patient education on the HRQoL in hemodialysis patients. Dialysis therapy has been associated with side effects and impairment of quality of life which are the main reason of reduced quality of life in hemodialysis patients. A total of 52 patients, geriatric patients were predominate when compare other age groups.

Higher numbers of hemodialysis patients were males. It clearly shows nearly 90% of married patients enrolled during this study period. The employment status study population revealed nearly 75% of patients not working and were geriatric patients. In the aspects of educational qualification higher number of hemodialysis patients was seen between 9th–10th std. Majority of hemodialysis patients had mixed food habits. Maximum number of hemodialysis patients had their monthly income between Rs 5001–Rs 10,000. All these results were shown in Table 1.

Majority of the hemodialysis patients had Diabetes Mellitus (DM). Condition in which three time dialysis is required for majority of hemodialysis patients. Majority of the hemodialysis patients had the benefit of health insurance. Only 20% have social habits like drinking and smoking. In this study it observed that more patients had the compliance of sleep disorders.

Table1 Demographic characteristics of hemodialysis patients

Characteristics	No. of patients(n=52)	Percentage (%)
Age		
>30	02	03.80
30–39	05	09.60
40–49	12	23.07
50–59	12	23.07
<60	21	40.40
Gender		
Male	34	65.40
Female	18	34.60
Marital status		
Married	49	94.20
Single	03	05.70
Employment status		
Working	14	26.90
Not Working	26	50.00
Retired	12	23.07
Diet		
Vegetarian	07	13.46
Mixed	45	86.50

Higher numbers of patients were admitted in ≥ 2 hospitals in the last year. Majority of the hemodialysis patients were using 7–9 drugs. All these results were depicted in Table 2.

Our data shows that when we correlate clinical data and QoL (Total SF-36 score) it shows that both the clinical data and the QoL (Total SF-36 score) have improved, so the clinical data and the QoL can be correlated with each other. The results shows significant improvement in creatinine, urea, sodium, phosphate and calcium level and non significant in hemoglobin and potassium and after counseling in hemodialysis patients. The greater improvement seen in the patients can be attributed to the fact that they received pharmaceutical care in addition to a regular physicians. The results were showed in Table 3.

Discussion

Dialysis care has increased in importance

throughout the world because of the growing prevalence of patients receiving RRT and its related morbidity and mortality and high social and financial costs.¹² This study aimed at describing HRQoL within the context of dialysis care and also illustrate how physical, psychological, social functioning, environmental and general health were affected in HD patients and also improved their HRQoL through patient counseling. Monitoring a patient's functional status and the subjective state of well-being, together known as QoL measurements is of particular importance in patients with ESRD.⁹

Majority of the HD patients did not have adequate financial security and suffered a loss of income. A side from time commitment, the increased dependence on family members, and the anxiety that the treatment causes, many patients feel depressed or tired after treatment. Some studies have reported more impaired QoL among those with lower education. In addition to sociodemographic fac

Table 2 Demographic characteristics of hemodialysis patients

Characteristics	No. of patients n=52	Percentage (%)
Type of co-morbidity		
Hypertension (HT)	12	23.07
Diabetes mellitus (DM)	18	34.60
HT and DM	16	30.70
HT, DM and IHD	02	03.80
Others	01	01.90
Unknown	03	05.70
Duration of treatment		
Three times a week	32	61.50
Twice in a week	16	30.70
Once in five days	04	07.60
Habits		
No social habits	41	78.80
Alcohol	03	05.70
Smoking	08	15.38
Sleep Complaints		
Yes	46	88.46
No	06	11.53

Table 3 Comparison of SF 36 questionnaire and the clinical parameters of hemodialysis patients before and after patient counseling

Parameter	Mean		SD		Mean Difference	t	p value
	Before	After	Before	After			
Physical health	40.09	50.30	1.85	1.81	-10.21	28.03	< 0.0001
Mental health	41.60	51.48	4.36	1.18	-9.880	6.602	0.00014
Total SF-36 score	41.45	51.38	3.34	0.978	-9.929	10.87	< 0.0001
Hb (mg/dl)	8.69	8.937	1.14	1.18	-0.2435	1.488	0.0714
Creatinine	9.23	8.469	2.762	2.706	0.7610	2.700	0.0094
Urea (mg %)	136.90	117.5	55.00	55.24	19.45	4.004	0.0001
Sodium (MEq/L)	140.50	135.6	9.518	4.552	4.862	4.028	< 0.0001
Potassium (MEq/L)	5.066	5.037	0.9621	1.105	0.02962	0.1951	0.4230
Phosphate(mg/dL)	6.198	5.329	1.554	1.215	0.8692	6.064	< 0.0001
Calcium (mg/dl)	8.829	8.527	1.155	1.224	0.3019	2.117	0.0196

tors, there are some clinical characteristics associated with lower QoL including use of multiple drugs, higher rate of hospital admissions and reporting of multiple chronic diseases.¹³ Sleep complaints are common in patients with ESRD on hemodialysis.

In this study lower quality of life was associated with older age, male gender and longer duration of treatment. A few studies have reported diabetes as a co-morbidity of ESRD resulting in significantly lower QOL scores.¹⁴ It was known that dietary habits play key role in renal disorder. From this observation vegetarians are less likely to get renal disorder than others. A social habit like smoking and alcohol indirectly triggers renal disorder and lower quality of life.

This study compared the results of SF-36 scales scores of HD patients before and after patient counseling. Both the Physical Health Component and the Mental Health Component showed statically significant lower quality of life score before counseling. The low physical health scores in HD patients clearly demonstrate that daily activities were disturbed in ESRD patients. The result may have been significant statistically in all the scale after counseling.

In this study hemoglobin level was low before and after patient counseling. It indicates that anemia is one of the complications of this disease for many patients.¹⁵ The symptoms of dyspnea, lethargy, palpitation and sweating in anemia are important symptoms of anxiety. So, it is obvious that uremic patients have high anxiety level.¹⁶ And hence lower the QOL in hemodialysis patients.

Elevated level of metabolic waste products like urea and creatinine lowers the HRQoL. There is a rapid shift of electrolytes from body which can lead to hyponatremia or hypernatremia in HD. Phosphate and calcium metabolism are disturbed in HD patients. Elevated level of potassium worsens the health of dialysis patients.

The current study showed increased knowledge related to ESRD, its management and self care activities after patient counseling results highly statistically significant difference. Our results shows the mean score and standard deviation of clinical data such as hemoglobin, serum creatinine, blood urea, electrolytes such as sodium, potassium, calcium and phosphate and the mean score and standard deviation of physical health, mental health and SF-36 before and after patient counseling. This finding shows a significant improvement after counseling.

Conclusions

To date the end stage renal disease remains an incurable disease. The currently available pharmacological and non-pharmacological treatments are able to offer only symptomatic relief for patients. Available therapies aim to improve the functional capacity of the patients for as long as possible; however they do not modify the progression of health related quality of life of Haemodialysis patients. Before the counseling all the patients have had a very low HRQoL. This was showed in their SF-36 score below 50. At the end of the study, HRQoL of hemodialysis patients was improved (>50).

The study confirms that improvement in knowledge of the disease and its management treatment, improves HRQoL, which in turn has a positive impact on treatment outcomes and quality of life (QoL) of dialysis patients. It also emphasizes the potential of the pharmacist to play an important role, as a patient educator, in the management of dialysis patients.

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