

Estimation of Quality of Life in Haemodialysis Patients

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Abraham and Ramachandran: Quality of Life of Dialysis Patients

Since haemodialysis is an expensive treatment modality for chronic renal failure patients, it is very essential to assess the outcome of therapy in terms of quality of life. The primary objective of the study was to estimate the effect of patient counselling in quality of life of end stage renal disease patients opting haemodialysis using World

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Health Organisation Quality of life scale and to assess the variables affecting the quality of life of these patients. Quality of life was determined by World Health Organisation Quality of life scale questionnaire comprised of 26 items which measures four domains: physical, psychological, social and environmental domain. A total of 81 patients were selected and divided into test and control group and the test group patients received counselling regarding their disease, use of medications, importance of adherence and the complications experienced during and after dialysis. The quality of life data was collected at the interval of 1, 2, 3, 6 and 12 months and the patients were counselled at each interval. The demographic profiles revealed that majority of the patients were in the age group of 31-50 and there exists a male predominance. About the socioeconomic status, upper middle class people were mostly affected. Assessment of impact of patient counselling in the quality of life of haemodialysis indicated a significant improvement in each domain after counselling. And also found that the psychological domain showed a significant increase in the score compared to others. Patient counselling helped to gain benefits in terms of improvement in quality of life and delayed progression of renal failure. Early recognition and prevention is necessary to improve the quality of life of chronic renal failure patients. Patient counselling should be made mandatory by incorporating clinical pharmacist in the nephrology team to make the patient understand his illness and modifications in lifestyle also create a positive environment and result in better quality of life.

Key words: Chronic renal failure, haemodialysis, patient counselling, WHOQOL-BREF

Majority of the Indian population is suffering from chronic disease such as diabetes or hypertension. Because of negligence or unawareness or due to the poor control of these disease conditions, complications such as renal failure may occur. Without proper care or management, this renal failure may progress to a condition where the glomerular filtration rate (GFR) is less than 15 ml/min. According to National Kidney Foundation classification of chronic renal failure, the stage at which the GFR is less than 15 ml/min is called the 5th stage or end stage renal disease (ESRD)^[1] where the treatment option is dialysis or transplantation. Reports say that out of one lakh ESRD patients only 20,000 get the proper treatment^[2]. This is mainly due to the lack of awareness of the disease and treatment options, inadequate access to the health centres, inability to afford the cost, minor reimbursement or nonavailability of insurance for chronic illness^[3].

The prevalence of ESRD in India has increased in the last two decades. It became a global threat with significant morbidity and mortality^[4]. It decreases patients' overall quality of life (QOL). It was proven that the QOL of ESRD patients is very poor and they have to undergo lifelong treatment for their survival. QOL is used to evaluate the general well being of individuals and societies. It may vary according to the patient as well as the disease condition. World Health Organization (WHO) has defined QOL as 'an individual's 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'^[5]. Various tools are developed to measure different aspects of the life. Many studies have been carried out for measuring the QOL with generic as well as disease specific instruments^[6]. However, such studies are limited in Indian scenario and this requires particular attention in developing countries where pharmacoeconomics and QOL studies evaluate renal replacement therapy in terms of its outcome. Pharmacoeconomics is an important tool in the socioeconomic studies of the healthcare system especially in developing countries. The assessment of health-related QOL is an essential element of health care evaluation and there by suitable measures can be taken to increase the QOL of ESRD patients.

According to the study conducted by Zhang *et al.* the dialysis patients (both haemodialysis and peritoneal dialysis) were experiencing complications such as cardiovascular disease and peritonitis, which in turn decreased the QOL. The study concluded that because of the lack of awareness, the patients were not come for the timely dialysis until more severe comorbidities developed^[7]. Studies proved that predialysis attendance helped to provide patient education and achieve better QOL^[8,9]. These finding were supported by the study conducted by Lii *et al.* and concluded that patients in the experimental group receiving psychosocial intervention showed reduced depression and better QOL compared to the control group^[10-12]. Comorbidities such as low haemoglobin level, diabetes, hypertension, dyslipidemia and thyroid disorders were significantly impair the QOL

of patients^[13-15]. This emphasises the significance of patient counselling which helps the patient to understand the lifestyle modification to be made in order to reduce the preventable comorbidities. Furthermore, through patient counselling, patient will be in good rapport with the pharmacist thereby increases compliance.

Main aim of this study was to evaluate QOL of haemodialysis patients and to analyse the variables affecting the QOL. A hospital oriented prospective, longitudinal, comparative study was conducted for one year (March 2011 to February 2012) in the nephrology department of a tertiary care hospital. Research committee reviewed the study and the ethical clearance was obtained from the institutional ethical committee. Informed consent forms were obtained from the patients. Inclusion criteria include age above 18 years, willing to give informed consent and patients who have been receiving haemodialysis regularly. Patients with major illness such as severe cardiac or neurological problems, psychoses, HIV, those opting for other treatment modalities such as peritoneal dialysis and those who have voluntarily withdrawn from dialysis were excluded. At the beginning of the study, there were 172 patients undergoing haemodialysis in this hospital. Of this, 81 met the inclusion criteria. 35 patients considered as test group and others who were not interested in counselling were included in the control group ($n=46$). Patients were interviewed and the demographic data and the details of comorbid conditions were collected. Patient counselling was provided to the test group patients regarding their disease, diet, exercise, lifestyle modification, use of medication and the importance of regular dialysis through the verbal and written materials.

QOL was determined by the generic instrument World health organisation quality of life (WHOQOL-BREF) questionnaire comprised of 26 items, which measures four domains: physical, psychological, social and environmental domain. WHO-BREF is a generic instrument. Questions pertaining to spirituality were also incorporated in this scale, which is very important, especially in chronic illness. Physical domain mainly measures the activities of daily living, energy, pain and discomfort, sleep and work capacity. Bodily image and appearance, negative and positive feelings, self-activities, spirituality, thinking and concentration were assessed in the psychological

domain. Social domain included personal relationship, social support and sexual activity. Financial resources, health and social care, home environment and participation in leisure activities were covered in the environmental domain. The QOL data was collected at the interval of 1, 2, 3, 6 and 12 months and the patients were counselled at each interval. By comparing the score values for test and control, QOL assessments were done by using the Statistical Package for Social Sciences (SPSS) Software version 17.0.

Socioeconomic status of the patient was assessed using modified Kuppaswamy's scale^[16]. This was updated according to the changes in the inflation rate and the income range updated for 2011 was used. Education, occupation and family income per month were considered to classify their socioeconomic status. Based on the total score patients were classified into an upper, upper middle, lower middle, upper lower and lower.

In this study, various parameters like age distribution, gender, duration of renal failure and comorbidities were analysed. The mean age of the study population of test and control were 48.2 ± 12.6 and 50.7 ± 12.1 years, respectively, and there exist a male predominance in both groups. About the socioeconomic status, upper middle class people were mostly affected. The reason for this was the treatment cost and patients in the upper income group only can afford the cost and such patients were undergoing dialysis regularly. These results were coinciding with that of published studies^[17,18]. Sociodemographic data and socioeconomic status of the patients are given in Table 1.

Causes and duration of renal failure were also studied. Hypertension was the leading cause which accounts for about 45% of cases. Diabetes and hypertension were prevalent in this population. Majority of the population had duration of renal failure about 3 years. It was found that the improper management of hypertension or diabetes in turn causes the progression of chronic renal failure to ESRD^[19,20].

It was found that the QOL of haemodialysis patients were significantly impaired. In this study, the domain scores of both test and control group of patients were calculated after the initial administration of the

TABLE 1: SOCIODEMOGRAPHIC DATA

Demographics	Test (%)	Control (%)
Age	48.2±12.6	50.7±12.1
Gender		
Male	74	67
Female	26	33
Comorbid conditions		
Diabetes mellitus	27	30
Hypertension	46	44
Both diabetes and hypertension	18	15
Other	9	11
Duration of renal failure		
Less than 3 years	8	7
3-5 years	28	31
5-7 years	41	38
More than 7 years	23	24
Socioeconomic status		
Upper	28	24
Upper middle	39	37
Upper lower	15	19
Lower	18	20

questionnaire. The domain scores were calculated according to the scoring manual which is given in the WHO-BREF scale. The low score of physical domain in haemodialysis patients clearly indicated that the patients were more dependent on dialysis for survival and the daily activities were disturbed. Many of them were dissatisfied with themselves and they often had negative feelings such as anxiety and depression. This resulted in a lower score in the psychological domain. These patients experienced poor personal relationship and social support and majority of them did not have adequate financial support and experienced a loss of income. All these factors resulted in lower QOL in haemodialysis patients^[21].

The impact of patient counselling in the QOL of haemodialysis patients was assessed. The result indicated a significant improvement in each domain after counselling. There was a remarkable difference in the QOL of haemodialysis patients in the test group during their 1st and 2nd visits and the control group showed only a slight change or remains constant. There was an increase in overall QOL of test group of patients when compared with the control group. The QOL of test group patients was compared with the control group using the independent *t* test. It showed that all the domain scores of test group was significantly higher than the control group ($P<0.001$). The results are provided in Table 2. In this study, we observed that there was an increase in the average score of the test group compared to the control group

TABLE 2: QUALITY OF LIFE ASSESSMENT AT THE END OF STUDY

Domains	Control (n=46) (mean±SD)	Test (n=35) (mean±SD)	P value
Domain1 (physical)	21.44±3.73	25.53±2.67	<0.001
Domain 2 (psychological)	17.27±3.11	24.84±2.82	<0.001
Domain 3 (environmental)	10.04±1.86	12.63±1.15	<0.001
Domain 4 (social)	23.49±4.53	32.73±3.52	<0.001

SD=Standard deviation, $P<0.001$ is considered as highly significant

in all the four domains. The increase in average domain score was highest in the psychological domain followed by physical, environmental and social relationship domains, respectively. As most of the ESRD patients were depressed and worrying about their health conditions, by removing their misconceptions about the disease we have observed an increase in the positive feelings in the patient. The spirituality level of the patients was found to be increased thereby their concentration, thinking and learning power was also increased. As a result, they were more involved in their self-activities without any negative feelings. Thus, patient counselling plays an important role in improving the QOL by changing their psychological thinking and leading them towards spirituality^[21,22].

Variables affecting the QOL of haemodialysis patients were studied. The main variables assessed were gender, socioeconomic status, marital status and comorbidities. The male patients reported significantly lower QOL scores in all domains compared to female patients. This may be due to the increasing number of male patients and also being the major earning member of family, majority of them felt that they were a burden to their family. However, the study done by Sathvik *et al.* showed that the QOL of females were less than that of males^[18].

Pearson correlation showed that there was a positive relationship between socioeconomic status and QOL domains, especially physical, psychological and environmental domains of haemodialysis patients with different socioeconomic status. Posthoc analysis showed that upper and upper middle patients scored significantly higher scores in those domains. These findings were consistent with other studies in which they found a positive correlation between income, employment and educational status. Financial constraints were less for upper and upper middle family that might be the major contributing factor

for higher scores^[23]. The higher educational status helps the patients to understand their illness in a better way and also about the importance of adherence to therapy. Marital status was not affected the QOL in this study. This was consistent with other studies.

Influence of comorbidity on QOL was also analysed. Patients with diabetes or hypertension experienced lower QOL than the patients without these conditions. This is in accordance with the study done by Valderrábano *et al.*^[24]. But we could find negative results also from other studies^[18]. Increase in number and severity of comorbidities may decrease the QOL, especially in physical, psychological and environmental domain.

The study showed that patient counselling can improve health related QOL by improving the awareness and removing the misconceptions about the disease. The major aim of our study was to improve the functioning ability of these patients by patient counselling. Patient counselling helped to gain benefits in terms of improvement in QOL and delayed progression of renal failure. Patient counselling about risk factors in CRF population proved that there was a delay in its progression. Early recognition and prevention is necessary to improve the QOL of CRF patients. Patient counselling should be made mandatory by incorporating clinical pharmacist in the nephrology team to make the patient understand his illness and modifications in life style also create a positive environment to get better QOL. Basic research for identification and management of diabetes and hypertension should be done to create awareness in the community level.

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