



# IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

Research Article

May 2020 Vol.:18, Issue:2

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## Assessment of the Quality of Life of Chronic Kidney Disease Patients Undergoing Haemodialysis in a Tertiary Care Hospital



**IJPPR**  
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals



**RIA MARIA VARGHESE<sup>1\*</sup>, STEPHY CHACKO<sup>2</sup>,  
ANINA ANIL<sup>3</sup>, JENI JOSEPH<sup>4</sup>, ABHILASH B<sup>5</sup>**

*<sup>1,2,3,4</sup> - 6th year Pharm D Students, Nazareth College of  
Pharmacy, Othara, Thiruvalla. India.*

*<sup>5</sup> - Assistant Professor, Department Of Pharmacy  
practice, Nazareth College of Pharmacy, Othara,  
Thiruvalla India.*

**Submission:** 21 April 2020  
**Accepted:** 29 April 2020  
**Published:** 30 May 2020



HUMAN JOURNALS

[www.ijppr.humanjournals.com](http://www.ijppr.humanjournals.com)

**Keywords:** Quality of Life, Chronic Kidney Disease, Patients Undergoing Haemodialysis, Tertiary Care Hospital

### ABSTRACT

Chronic Kidney Disease (CKD) has emerged as a major public health hazard worldwide accounting for 98.02% increase in death over the last 27 years. All stages of CKD are associated with increased risks of cardiovascular morbidity, premature mortality, and/or decreased quality of life. The study focuses on CKD patients undergoing haemodialysis, their disease condition and the resultant quality of life. **Objective:** In addition to survival, the quality of the remaining life is a highly relevant patient outcome in the evaluation of treatment in CKD. In chronic diseases like chronic kidney disease, quality of life is an important parameter that needs to be addressed as there is a high incidence of complications, comorbidities, polypharmacy, high treatment cost. As a result of both chronic disease processes and over-prescription of medicines, there is a negative impact on the quality of life (QOL) of the patients. This study aims to provide an insight into the Quality of Life (QOL) of the selected subjects using the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire which encompasses four important domains, namely physical, psychological, social and environmental to assess the quality of life, thereby, provide a reliable outcome measure of the current treatment standards and practices and hence evaluate its long term response and impact on the patients in the healthcare setting. **Method:** This prospective observational study was carried out with 135 patients who had been undergoing hemodialysis in the Nephrology Department of Muthoot Healthcare hospital Pvt Ltd, Kozhencherry, for a period of 6 months study to assess the Quality of Life (QOL) using WHOQOL BREF questionnaires in chronic kidney disease patients undergoing haemodialysis. **Conclusion:** All the patients were provided with WHOQOL BREF questionnaires to assess their QOL and their impact on physical, psychological, social and environmental domains. The study revealed that the QOL of CKD patients is severely impaired, and the physical domain (38) is the most affected followed by psychological (42), social (45) and environmental domain (56).

## INTRODUCTION

Chronic kidney disease is defined as a reduction in the glomerular filtration rate (GFR) and/or urinary abnormalities or structural abnormalities of the renal tract, present for 3 months or longer with implications for health. The structural abnormalities include albuminuria of more than 30mg/day, presence of haematuria and electrolyte disturbances. It is an irreversible progressive condition responsible for high morbidity and mortality rates<sup>[3]</sup>.

Chronic kidney disease (CKD) is characterized by multiple disorders affecting the morphology and function of kidneys. It is estimated on the basis of a decrease in the number of nephrons, which ultimately decreases the glomerular filtration rate (GFR) for a period more than 3 months. Hypertension and diabetes, recurrent infections along with an inappropriate prescription of drugs are the leading factors resulting in the increasing incidence of CKD. CKD accounts for 850,000 deaths worldwide as reported by World Health Organization.

Chronic Kidney Disease (CKD) is an irreversible progressive condition responsible for high morbidity and mortality rates and is becoming a major health care problem worldwide. The prevalence of CKD increases with age and will continue to rise, reflecting the growing elderly population. As the prevalence of CKD increases they are at a higher risk for progression into End Stage Renal Disease (ESRD) requiring dialysis to maintain the patients' long term survival.

Quality of life (QoL) is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life<sup>[12]</sup>. 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. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment<sup>[13,14]</sup>. Although health is one of the important domains of overall quality of life, there are other domains as well—for instance, jobs, housing, schools, the neighbourhood. Aspects of culture, values, and spirituality are also key aspects of overall quality of life that add to the complexity of its measurement<sup>[15,16]</sup>. Researchers have developed useful techniques that have helped to conceptualize and measure these multiple domains and how they relate to each other<sup>[17]</sup>. Health-related quality of life

(HRQoL) was adapted from the more general and wide-ranging concept 'quality of life'. HRQoL refers to the physical, psychological and social domains of health that are unique to each individual [12]. Each of these domains can be measured by the objective assessments of functioning or health status and the subjective perceptions of health. "There is general consensus that in addition to survival, the quality of the remaining life is a highly relevant patient outcome in the evaluation of treatment" (Merkus, et al., 1999, p.720). The question remains how the mental and physical issues influence the patients' quality of life, which is of utmost importance [18].

Quality of life therapy (QoLT) is the only cognitive-behavioural treatment that targets happiness and life satisfaction in multiple life domains (e.g. relationships, enjoyable activities, self-esteem, etc.) with a specific goal of improving overall QoL [19]. This is important because the World Health Organization has emphasized the importance of a patient's subjective perception of life in the context of his or her value systems, goals, expectations and standards.

In chronic diseases like chronic kidney disease quality of life is an important parameter that needs to be addressed as there is a high incidence of complications, comorbidities, polypharmacy, high treatment cost. As a result of both chronic disease processes and over-prescription of medicines, there is a negative impact on the quality of life (QOL) of the patients. So to examine the quality of life, different instruments have been developed specifically for those with kidney disease and on dialysis. The World Health Organization have developed The World Health Organization Quality of Life (WHOQOL-BREF) questionnaire to understand the response to the need for proper and thorough insight into the quality of life of patients in the healthcare setting. "The WHOQOL measurement approach assumes subjective evaluation of both positive and negative indicators of quality of life and includes areas not covered in other health-related quality of life instruments, but which are important to persons throughout the world and are important in evaluating the quality of life of individuals within their larger social arrangements" (Bonomi, Patrick, Bushnell, & Martin, 2000, p.1). WHO QOL-BREF instrument is a scale for patients of CKD because this disease condition affects different body systems and also such patients usually have associated other co-morbid conditions. WHO QOL-BREF is expected to address QOL in multiple disease states associated with CKD in a better manner. as reflected by its four domains: physical, psychological, social, and environmental. WHOQOL-BREF questionnaires is a generic

health-related questionnaire developed by the WHOQOL group to quantify the health-related quality of life of chronic kidney disease patients. The WHOQOL-BREF was developed as a shortened version of the WHOQOL and has proven to be a “sound, cross-culturally valid assessment of quality of life, and consists of 24 facets and provides a profile of scores on four dimensions of quality of life: physical, psychological, social and environmental health. WHOQOL-BREF is available in both self-administered and interviewer-administered forms. And two items include overall perception of QOL and health of the patient.

Physical domain asks about activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, work capacity, physical health.

Psychological domain asks about bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/religion/personal beliefs, thinking, learning, memory and concentration. Social domain asks about personal relationships, social support, sexual activity and Environmental domain asks about financial resources, freedom, physical safety, security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic/climate) transport. All questions answered by the patients will be scored accordingly by the WHOQOL BREF guidelines and the scores for each domain will be computed statistically.

This study can illustrate how physical, psychological, social functioning, environmental, and general health are affected in ESRD patients. Here the functioning ability of these patients is also assessed so that they can enjoy life to its fullest possible extent.

## **MATERIALS AND METHODS**

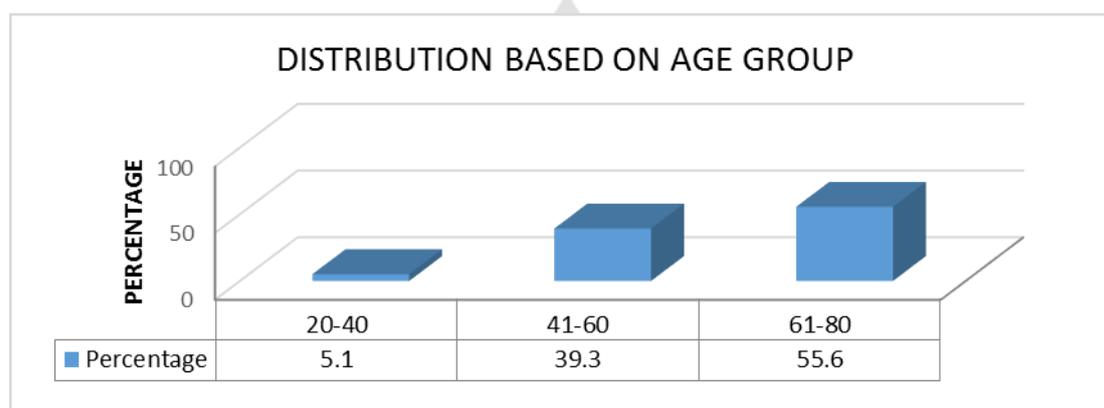
This is a prospective observational study conducted over a period of 6 months in the Nephrology department of Muthoot Healthcare Hospital Pvt Ltd, Kozhencherry, Kerala, India after obtaining the approval from the Institutional Ethics Committee of the hospital. A sample size of 135 patients of both genders diagnosed to have chronic kidney disease undergoing haemodialysis in the Nephrology unit between the age of 20-80 years were included in the study. Patients who were pregnant were excluded from the study. All patients were provided with a brief introduction regarding the study and the confidentiality of the data. A written Informed Consent printed in their understandable language was obtained from

the patient or caregiver if the subject was unable to give the same. Then, to determine the quality of life of patients the WHOQOL BREF questionnaires were given to the patients in both English and Malayalam language and their quality of life in various domains were assessed statistically. The data collected was entered in Microsoft excel -2010 version and results were analysed. Results were presented in tabular form and presented as frequency and percentages.

## RESULTS

**TABLE No. 1: DISTRIBUTION OF PATIENTS BASED ON AGE GROUP**

Sr. No.	Age Group	Frequency	Percentage (%)
1	20-40	7	5.1
2	41-60	53	39.3
3	61-80	75	55.6
	Total	135	100

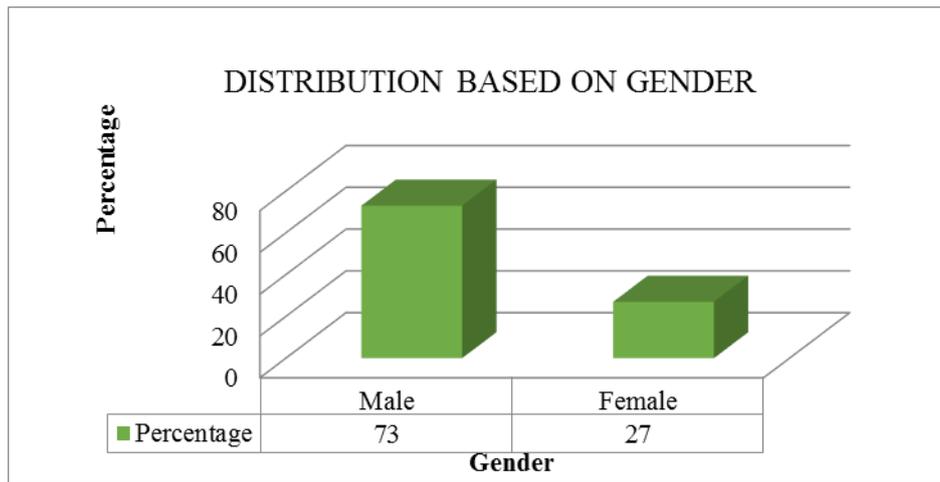


**FIGURE No. 1: DISTRIBUTION OF PATIENTS BASED ON AGE GROUP**

In this study, the highest percentage of haemodialysis patients were found to be in the age group of 61-80(55.6%) followed by the age groups 41-60(39.3%), and 20-40(5.1%).

**TABLE No. 2: DISTRIBUTION OF PATIENTS BASED ON GENDER**

Sr. No.	Gender	Frequency	Percentage (%)
1	Male	98	73
2	Female	37	27
	Total	135	100

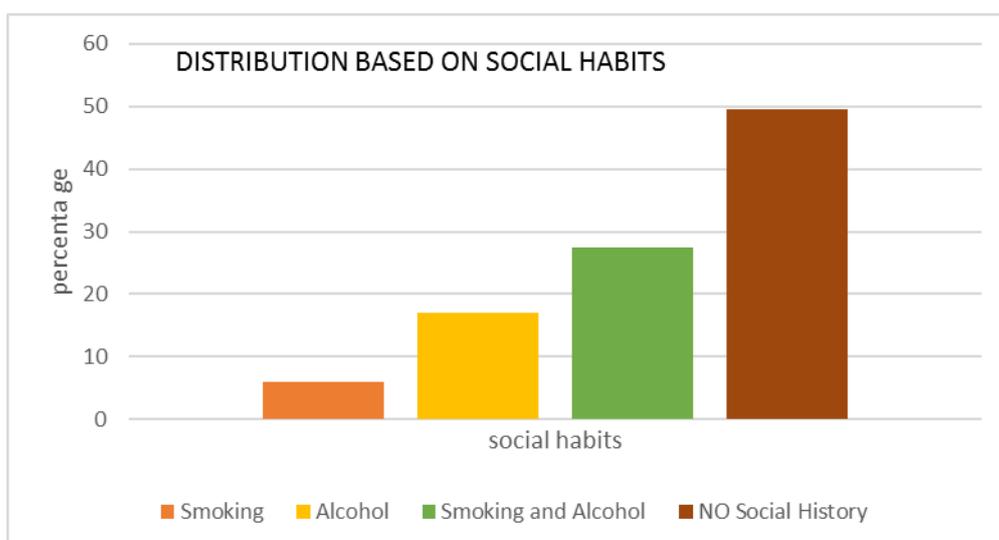


**FIGURE No. 2: DISTRIBUTION OF PATIENTS BASED ON GENDER**

In this study, 73% of the study population was constituted by males whereas 27% was constituted by females.

**TABLE No. 3: DISTRIBUTION OF PATIENTS BASED ON SOCIAL HABITS**

Sr. No.	Social History	Frequency	Percentage (%)
1	Smoking	8	6
2	Alcohol	23	17
3	Smoking and Alcohol	37	27.4
4	No Social History	67	49.6
	Total	135	100



**FIGURE No. 3: DISTRIBUTION OF PATIENTS BASED ON SOCIAL HABITS**

Here, 49.6% of the study population had no history of alcoholism and smoking, 17% had history of alcoholism, 6% had history of smoking and 27.4% had history of both alcoholism and smoking.

**TABLE No. 4: DISTRIBUTION OF PATIENTS BASED ON WORKING STATUS**

Sr. No.	Working Status	Frequency	Percentage (%)
1	Working	4	3
2	Not working	115	85
3	Retired	16	12
	Total	135	100

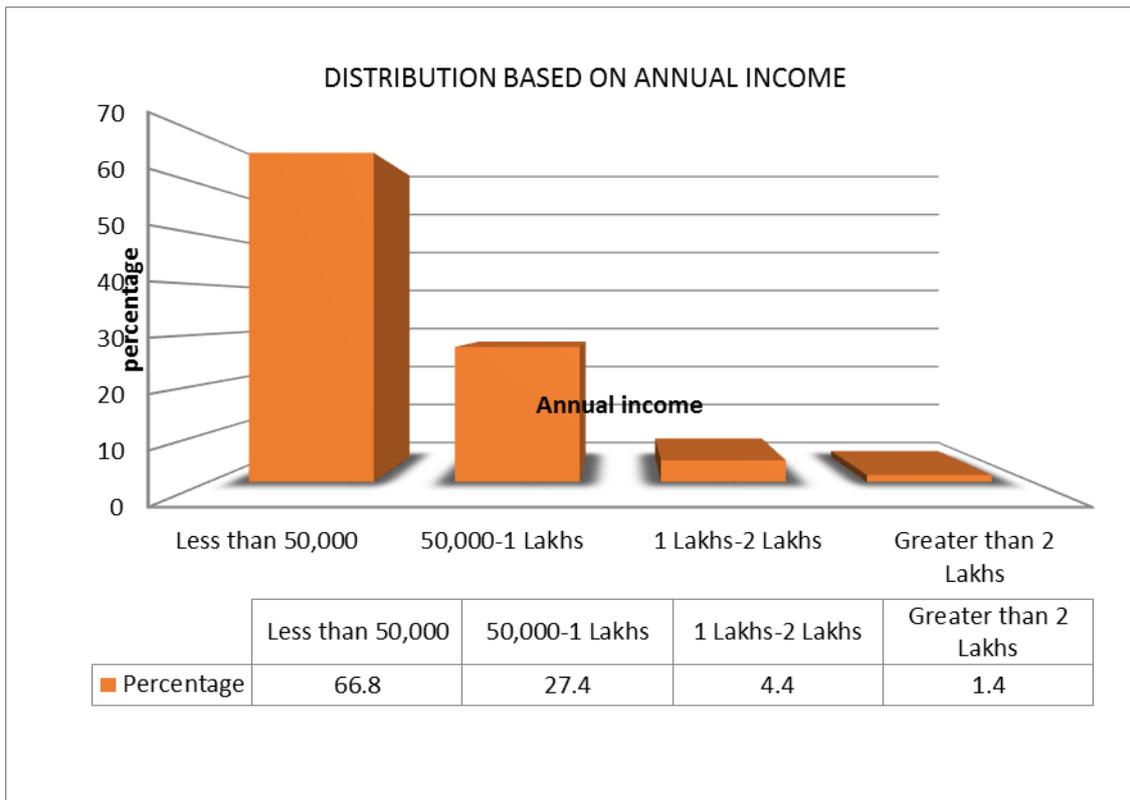


**FIGURE No. 4: DISTRIBUTION OF PATIENTS BASED ON WORKING STATUS**

In this study, 85% of the subjects were found to be not working, 3% were working and 12% were retired.

**TABLE No. 5: DISTRIBUTION OF PATIENTS BASED ON ANNUAL INCOME**

Sr. No.	Annual Income	Frequency	Percentage (%)
1	Less than 50,000	90	66.8
2	50,000-1 Lakhs	37	27.4
3	1 Lakhs-2 Lakhs	6	4.4
4	Greater than 2 Lakhs	2	1.4
	Total	135	100

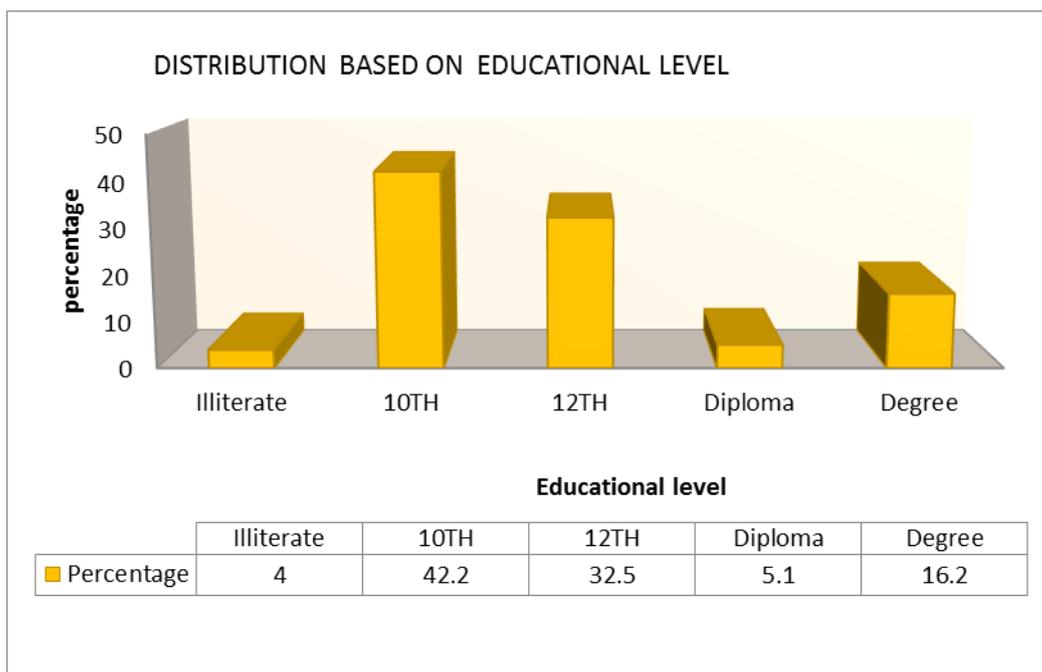


**FIGURE No. 5: DISTRIBUTION OF PATIENTS BASED ON ANNUAL INCOME**

In this study, about 66.8% of the subjects had an annual income less than 50,000, 27.41% had an annual income of 50,000-1lakh, 4.4% had an annual income of 1-2 lakhs and 1.4% had an annual income of greater than 2 lakhs.

**TABLE No. 6: DISTRIBUTION OF PATIENTS BASED ON EDUCATION LEVEL**

Sr. No.	Education Level	Frequency	Percentage (%)
1	Illiterate	5	4
2	10TH	57	42.2
3	12TH	44	32.5
4	Diploma	7	5.1
5	Degree	22	16.2
	Total	135	100

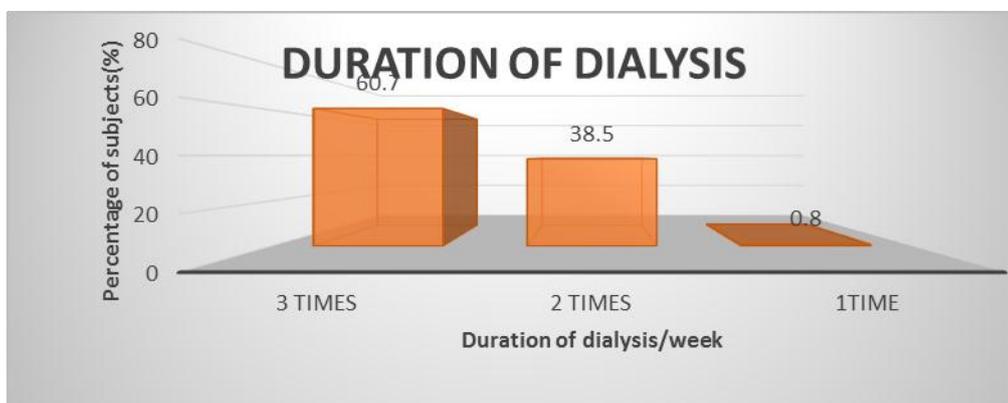


**FIGURE No. 6: DISTRIBUTION OF PATIENTS BASED ON EDUCATION LEVEL**

Here we observed 42.2 % were educated till 10<sup>th</sup>, 32.5% had educated till 12<sup>th</sup>, 16.2% have educated till degree, 5.1% have educated till diploma and rest of them were illiterates (4%).

**TABLE No. 7: NUMBER OF DIALYSIS SESSIONS PER WEEK**

Sr. No.	Duration of Dialysis per week	No. of Subjects	Percentage (%)
1	3 Times	82	60.7
2	2 Times	52	38.5
3	1 Time	1	0.8
	Total	135	100

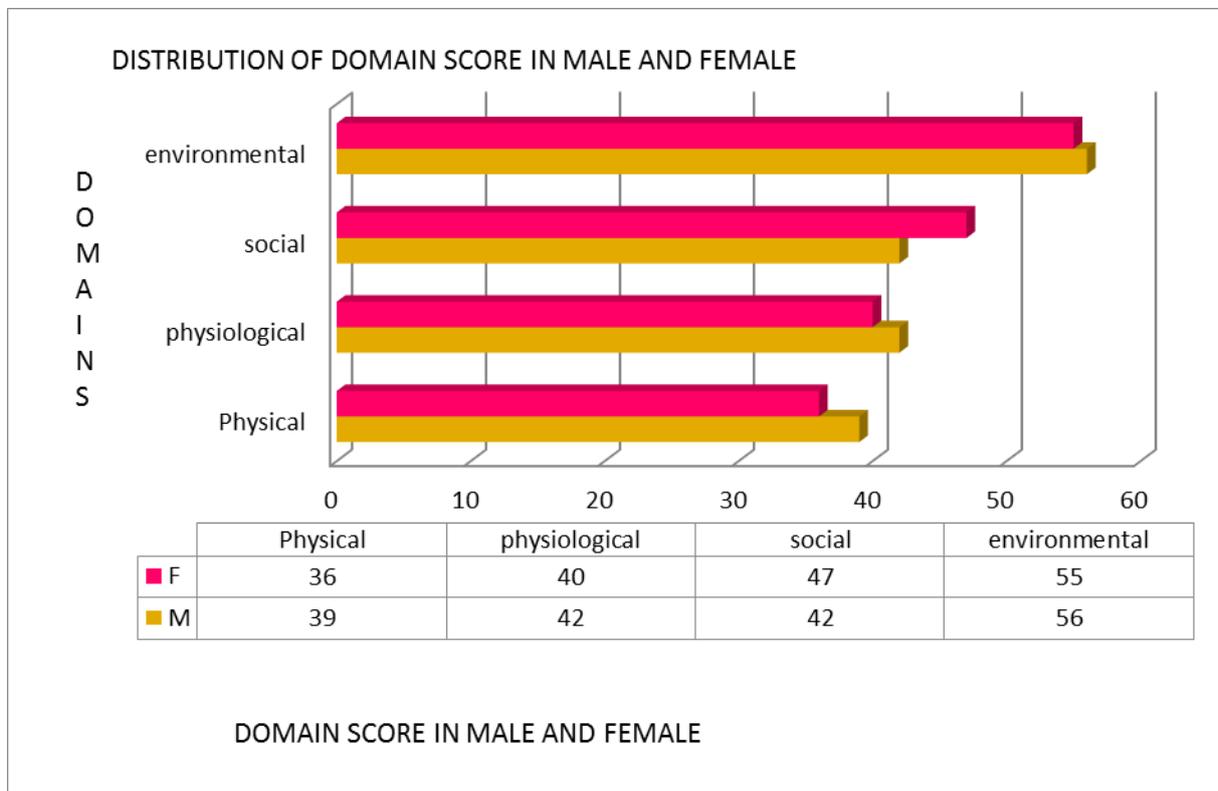


**FIGURE No. 7: NUMBER OF DIALYSIS SESSIONS PER WEEK**

In this study most of the patients (60.7%) have been undergoing dialysis 3 times a week, followed by 38.5% of patients undergoing 2 times a week and 0.8% of patients undergoing dialysis once in a week.

**TABLE No. 8: COMPARISON OF DOMAIN SCORE IN MALE AND FEMALE**

Sr. No.	DOMAIN SCORE	MALE	FEMALE
1	Physical	39	36
2	Physiological	42	40
3	Social	42	47
4	Environmental	56	55



**FIGURE No. 8: COMPARISON OF DOMAIN SCORE IN MALE AND FEMALE**

In this study, the physical domain was severely affected in both males (39) and females (36), followed by psychological domain males (42) females (40), social domain males (42), females (47) environmental domain males (56) females (55).

## DISCUSSION

The quality of life of haemodialysis patients was found to be impaired and the most affected domain was found to be the physical domain. These findings are consistent with those of similar studies on the assessment of QOL of haemodialysis patients [25,26].

Females were found to be more affected than males except in social domain as females tend to be better equipped in terms of communication skills, social support, personal relationships and/or a general perspective of the disease condition and its acceptance. The impaired physical domain score of females as compared to males can be attributed to their general body infrastructure and metabolism as they have a reduced energy levels and tolerance to pain.

The reduced scores in psychological domain of female patients can be attributed to their general attitude towards the disease, learning, memory, concentration, response to positive and negative feelings and/or personal beliefs. There is no significant variation between males and females in the environmental domain which can be attributed to factors such as financial resources, home environment, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic/climate), transport etc. which are variable regardless of gender.

In a study by **Sathvik et al.**, [28] (2008) they assessed the QOL of hemodialysis patients with the QOL of the general population, renal transplant patients, and patients with asthma. The WHO-BREF questionnaire was used to assess the quality of life. Their outcome was that the quality of life of hemodialysis patients was found to be significantly impaired in comparison to healthy individuals with respect to the physical, psychological, and social relationship domains.

The physical, psychological, social and environmental domain scores were 38.81, 40.72, 53.9, and 60.5 respectively. This study is similar to the present study where the QOL of life of haemodialysis patients were significantly impaired in physical domain [18], psychological domain (42), social domain (45) and environmental domain. In both studies the patients scored less in physical domain and scored better in environmental domain.

In study by **Shalini Chawla et al.**, [2] (2016) they assessed the Quality of Life using World Health Organization (WHO) BREF QOL scale, and the results were found to be physical

domain, psychological domain, social domain, environmental domain. Here QOL was severely impaired in all the domains which is similar to our study.

## CONCLUSION

All the patients were provided with WHOQOL BREF questionnaires to assess QOL and their impact on physical, psychological, social and environmental domains. The study revealed that the QOL of CKD patients is severely impaired, and the physical domain (38) is the most affected followed by psychological (42), social (45) and environmental domain (56). The multiple effects of CKD associated complications, coexisting diseases, frequent dialysis, increased number of drug administration including polypharmacy further affect the overall treatment outcome and quality of life of the afflicted patient populations.

We think counselling on needful lifestyle modification and good health education about the disease, management, its complications in the early stage of the disease, certainly reduces the incidence of these diseases and also reduces the cost, mortality and morbidity due to these.

Areas of Conflict: Nil

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