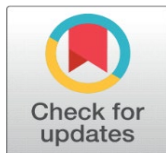# ASSESSMENT OF QUALITY OF LIFE OF CHRONIC KIDNEY DISEASE PATIENT ATTENDING IN SELECTED HOSPITALS, WEST BENGAL

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ABSTRACT

Introduction: Chronic Kidney disease (CKD) is still a health problem in India & increasing number of new cases. profound physiological, psychological, social effect due to CKD hurt the quality of life.

Aim: This study aims to find out quality of life of CKD patient and association between quality of life with demographic variables.

Method: The investigator conducted a descriptive study on assessment of quality of life (QOL)among chronic kidney disease patients attending selected Nephrology and Medicine OPD of West Bengal with the objective to assess quality of life and to find out the association between quality of life and selected demographic variables. The conceptual framework adopted for the study was based on Sr. Callista Roy's adaptation model (1989). Non-probability convenience sampling technique was adopted to select 173 respondents. The tools used for the study were semi-structured interview schedule and WHOQOL-BREF.

Result: The study findings revealed that the majority of the respondents (69.37%) had an average quality of life. The result also showed that respondents had maximum quality of life in social domain and minimum quality of life in psychological domain. A significant association found between quality-of-life score and addiction as chi- square value was 4.782=3.841] at 0.05 level of significance. The study has several implications in Nursing education, practice, administration, and research. The study concluded with recommendations for future intervention and improve policy implementation regarding CKD clinics for improving the quality of life among this population.

Keywords: Chronic Kidney Disease, Quality of Life

1. INTRODUCTION

Chronic diseases can have multiple effects, including increased mortality, long-term morbidity, and a decline in quality of life (QOL). The World Health Organization (WHO) defines QOL as individuals' perceptions of their position in life within the context of their culture, value systems, goals, expectations, standards, and concerns World Health Organization (n.d.). chronic kidney diseases are becoming increasingly prevalent, and according to the WHO Global Burden of Disease project,

they rank as the 12th leading cause of death and 17th cause of disability. The prevalence of CKD varies across different healthcare settings and is influenced by the presence of coexisting diseases Anand et al. (2022). The burden of CKD also depends on factors such as access to care, quality of care, timing, and social support. QOL encompasses various domains and components, including functional ability, social interaction, psychological well-being, somatic sensations, happiness, life situations, life satisfaction, and the fulfilment of needs Brown et al. (2004). Assessing QOL is vital for evaluating treatment interventions and their benefits. As renal disease management is still in its early stages in this particular state, studies on the quality of life in CKD have been limited.

Chronic kidney disease (CKD) has emerged as a global burden within the healthcare system, posing a significant threat to human well-being and notably affecting the quality of life (QOL) during later stages of the disease. The prevalence of CKD is high among middle-aged and elderly populations, irrespective of their location in developed or developing countries. Many CKD cases coincide with other chronic non-communicable diseases like hypertension and diabetes mellitus. CKD exerts an impact on various aspects, including individual quality of life, family income, and the contribution to social and national development. Additionally, CKD patients have become substantial consumers of public health resources, particularly within haemodialysis clinics.

Quality of Life (QOL) refers to the level of satisfaction or happiness that an individual experiences in life, taking into account their unique context and personal experiences. It encompasses various dimensions, including physical, mental, social, and overall general health. The Kidney Disease Quality of Life Working Group in the USA has emphasized that QOL encompasses holistic well-being, which includes physical, mental, emotional, social, and psychological health. QOL has emerged as a primary objective in enhancing the quality of healthcare services, serving as a measure of patient treatment outcomes. Bullinger & Quitmann (2014)

The global incidence and prevalence of chronic kidney disease (CKD) are on the rise. While some studies have examined the quality of life (QOL) of patients undergoing dialysis, limited information is available regarding the QOL of patients receiving conservative treatment for CKD and the association between QOL and the early stages of the disease. The QOL of these patients appears to be lower than that of the general population but relatively better compared to patients undergoing dialysis. Several factors, including anaemia, coexisting diseases, and early intervention by nephrologists, seem to influence the QOL of these patients. Perlman et al. (2005)

In 2015, chronic kidney disease (CKD) accounted for 1.1 million deaths globally, ranking as the 12th leading cause of mortality. By 2017, the number of CKD-related deaths had risen to 1,230,200, reflecting a 33.70% increase in the death rate between 2007 and 2017. Within the realms of fundamental human rights and access to healthcare, individuals aspire to attain enhanced physical and mental well-being, longer life expectancy, and an overall improved quality of life through various interventions. These demands have been witnessing a significant surge on a global scale in recent times. Lv & Zhang (2019)

2. STATEMENT OF THE PROBLEM

Assessment of quality of life of chronic kidney disease patient attending in selected hospitals, West Bengal.

3. OBJECTIVES

1) To assess quality of life among patients with chronic kidney disease.
2) To find out the association between quality of life among patients with demographic variables.

4. METHODOLOGY

This study was carried out using a descriptive survey research design that included convenience sample of people with CKD. It was conducted in Nephrology OPD at three tertiary hospitals in Kolkata ,West Bengal .The eligible participants were adult with CKD diagnosed by physician .Patients who are critically ill and who are below 18 years of age were excluded from this study .This study was based on Roy's Adaptation Model (1976).Content validity of two tools was established by 07 experts from the field of Medicine, Community medicine, clinical psychology, mental health nursing, and medical surgical nursing. Reliability of both the tools was computed by Cronbach's alpha method, computed reliability was 0.89. Ethical approvals were obtained from the ethical committee of each targeted hospitals. All participants received informed consent forms to take part in the study. Both descriptive and inferential statistics (chi -square test) were used to analysis the data. Data analysis was planned on the basis of objectives of the study using descriptive (frequency and percentage distribution, mean, median, standard deviation, mean percentage) and inferential statistics (chi square test).Considering the objectives of the study WHOQOL-BREEF tool was used and data were organized in three sections:section1 demographic characteristics of the sample;11 items including age in years, gender, marital status, educational level, occupation, monthly family income, addiction, duration of suffering, history of any comorbidity, taking dialysis, duration of taking dialysis, section II assessment of quality of life with chronic kidney disease, section III association between quality of life among patients with demographic variables.

5. RESULTS

A total of 173 patients were included in this study. The majority age group of the whole sample was 41 -50 years .67.63% were male ,84.97% were married ,52.02% were non addicted. Findings related to assessment of Quality of life 69.37% had average QOL,17.34% had good QOL, and 13.29% had poor QOL.

In domain wise distribution it is inferred that the mean QOL was 52.77 in social relationship domain and 45.17 in psychological domain. That means QOL was highest in social domain and lowest in psychological domain.

The chi – square test inferred that there was significant association found between quality of life and history of addiction of the respondent. Statistical significance was set at $p<0.05$.

Data present in Figure 1 shows that 28.32% patients belonged to the age group of 41- 50 yrs., 24.86% patients belonged to the age group 51-60 yrs., 19.65% patients were from the age group 31-40 yrs. 16.77% patients belonged to the age group of 20-30 yrs. And only 10.40% patients belonged to the age group of 61-70 yrs. Figure 2 shows 67.63% patients were male and 32.37% patients were female. Figure 3 shows that 84.97% patients were married 10.98% patients were unmarried and 4.05% patients were widow. Data presented in Figure 4 shows that 51% patient's educational level was primary, 25% patients passed secondary

examination, 13% patients were graduate and 10% patients passed H.S. examination. Figure 5 shows 24% patients were housewife, 21% patients were engaged in business, 15% patients were unemployed, 14% patients were labour, 14% patients were farmer,12% patients were service holder. Figure 6 shows that 77% patient's monthly family income was Rs.5000 - 10000. 19% patient's monthly family income was more than Rs.10000 and only 4% patients' monthly family income was less than Rs. 5000. Data presented in Figure 7 depicts that 52 % patients were non addicted and 32% patients were smoker,10% patients were addicted with khaini,4% patients with pan and 2 % patients were alcoholic. Figure 8 shows that 37% patients were suffering 1-2 years,30% patients were suffering from less than 1 year,24% patients were suffering from 3-5years, and 9 % were suffering from above 5 years. Data presented in Table 1 shows that 32.95 % respondents had hypertension ,23.70% respondents had diabetes,19.08% respondents had both diabetes and hypertension and 24.28% respondents had no history of any comorbidity. It also shows that 61.85 % respondents had taken dialysis and 38.15 % respondents had not taken dialysis. 64.49 % respondents had taken dialysis more than 6 months and 35.51 % respondents had less than 6 months.
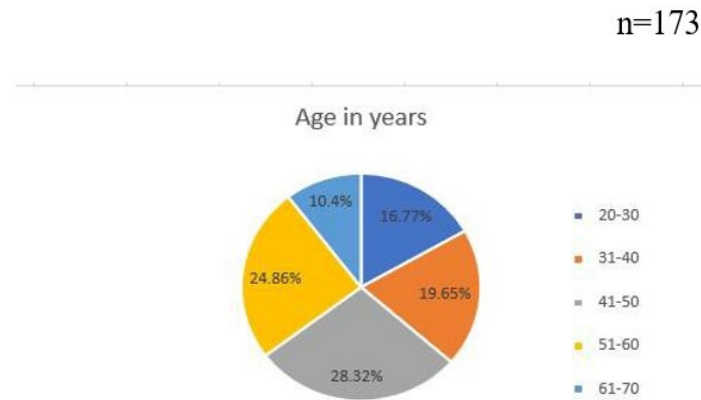
Figure 1

Figure 1 Pie Diagram on Age Distribution of Respondents

Figure 2
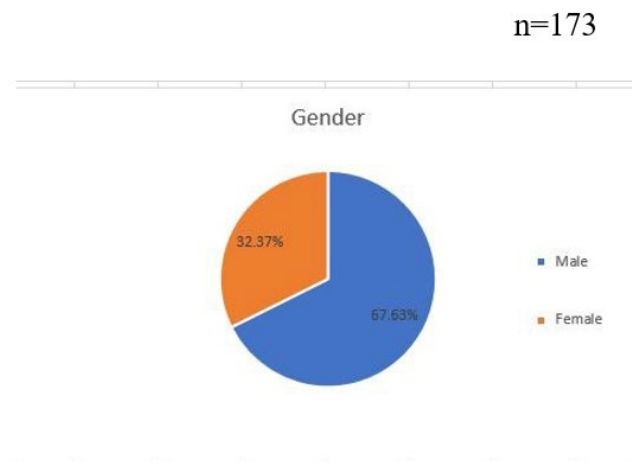
Figure 2 Pie Diagram on Gender Distribution of Respondents

Figure 3

n=173

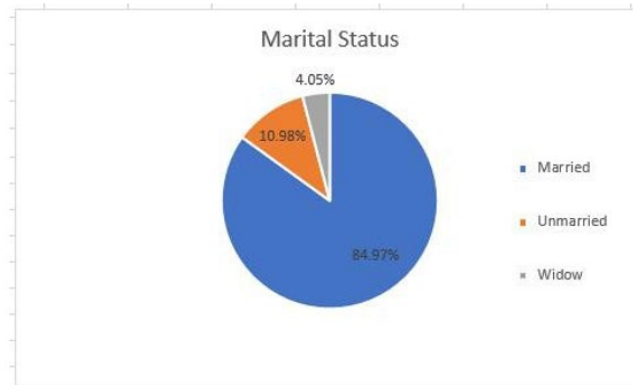**Figure 3** Pie Diagram on Religion of Respondents
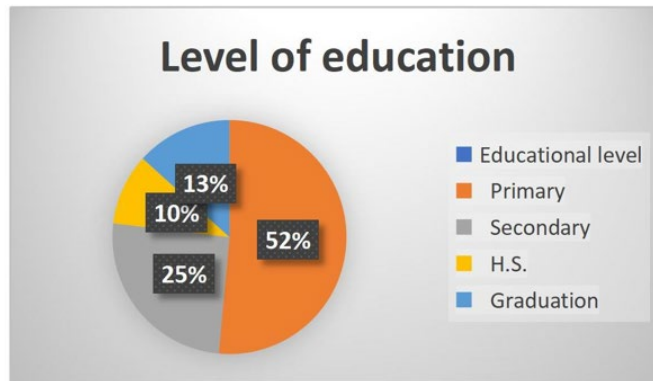
Figure 4

n=173

Figure 4 Pie Diagram on Level of Education

Figure 5
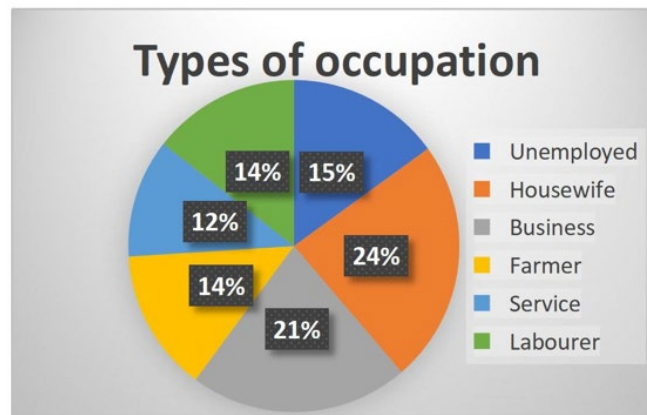
n=173

Figure 5 Pie Diagram on Types of Occupation
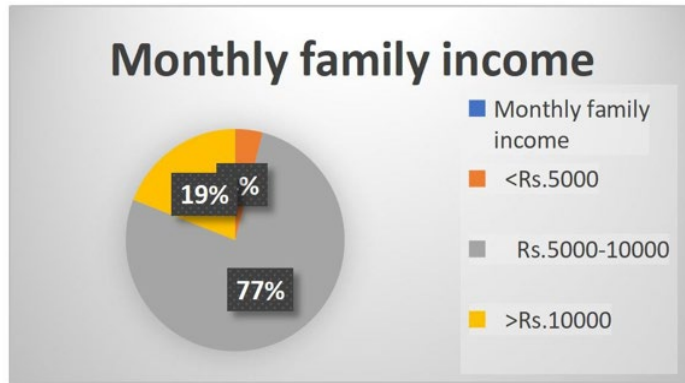
Figure 6

n=173

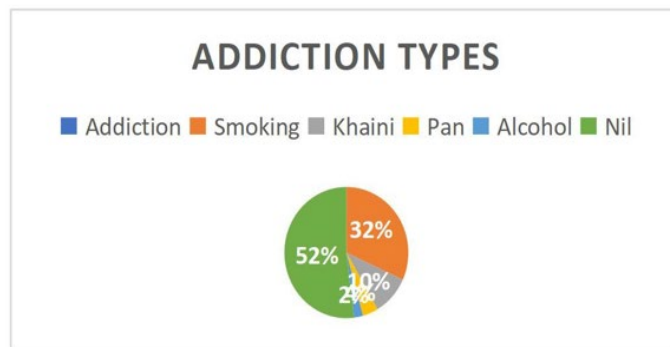**Figure 6** Pie Diagram on Monthly Family Income

Figure 7
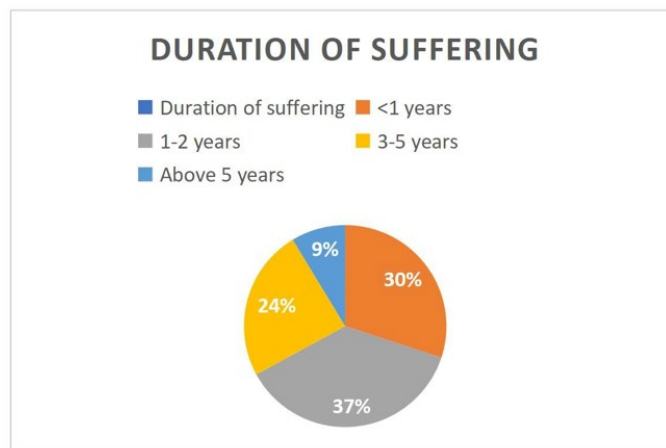
n=173

Figure 7 Pie Diagram on Addiction Type

Figure 8

n=173

Figure 8 Pie Diagram on Duration of Suffering

Table 1

Table 1	n=173
Variables	**Percentage**
History of any co-morbidity	
Diabetes	23.70
Diabetes H TN	19.08
HTN	32.95
No comorbidities	24.28
Taking dialysis	
Yes	61.85
No	38.15
Duration of taking dialysis (n= n_1+n_2 n_1=107)	
< 6 months	35.51
> 6 months	64.49

Section II Findings related to the assessment of quality of life among patients with chronic kidney disease. Data presented in Table 2 depicts that 120 (69.37%) of CKD patients' quality of life was moderate whereas 30 (17.34 %) patients' quality of life was good and rest of 23 (13.29%) patients' quality of life was poor.

Table 2

Table 2			n=173
Quality of Life	**Score**	**Frequency**	**Percentage**
Good	>222.75	30	17.34
Average	179.39-222.75	120	69.37
Poor	<179.39	23	13.29

Data presented in Table 3 shows that mean was 201.07, median was 200, and standard deviation was ±21.68 of total score of CKD patients. The table also depicts that obtained range of total score was 123 -259.

Table 3

Table 3				n=173
Variable	**Range***	**Mean**	**Median**	**SD±**
Quality of life	123-259	201.07	200	21.68

Data presented in Table 3 shows that in social domain, the obtained mean was 52.77. The SD was 13.56 showing mild variation among responses with mean percentage of 52.77, with ranked as 1st. It also depicts that the SD of social domain score of CKD patients was 13.56 and median was 56. Followed by in environmental domain with a mean score was 50.87, mean percentage score was 50.87, ranked as 2nd. It also depicts that the SD of environmental domain score of CKD patients were 10.22, and median was 50. It also shows that in physical domain the obtained mean was 47.10. The SD was 8.67 with mean percentage of 47.10, which ranked as 3rd and median was 44. Followed by in psychological domain with a mean score was

45.17, mean percentage score was 45.17, ranked as 4th. It also depicts that the SD of psychological domain score of CKD patients was 9.96 and median was 44.

This result shows that the respondents had maximum quality of life in social domain and minimum quality of life in psychological domain.

Table 4

Table 4						n=173
Domains of Quality of Life	**Maximum Possible Score**	**Mean**	**Median**	**SD±**	**Mean%**	**Rank**
Physical health	100	47.10	44	8.67	47.10	3
Psychological health	100	45.17	44	9.96	45.17	4
Social health	100	52.77	56	13.56	52.77	1
Environmental health	100	50.87	50	10.22	50.87	2

Section – III Findings related to the association between quality of life among patients with demographic variables.

The data presented in Table 4 shows that 60 out of 173 clients who were below 50 years scored at and above median and 52 scored below median. Among the clients aged above 50 years, 30 scored at and above median and 31 scored below median. Chi -square test was done to find out the association between quality-of-life score and age of the respondent. The calculated value of χ^2 was 0.305 which was lower than the tabulated value 3.841 df 1 at 0.05 level of significance which is statistically non-significant. So, it can be concluded that the quality of life was not dependent on age (in years) of the respondents. The data also shows that among 56 out of 173 respondents who had male at and above median and 61 scored below median.

Among the respondents 34 ware female scored at and above median and 22 scored below median. Chi-square test was done to see the association between quality-of- life score and gender of the respondents. The calculated value of χ^2 was 2.506 which was lower than the tabulated value 3.841 for df 1 at 0.05 level of significance which is not statistically significant. So, it can be concluded that the quality of life was not dependent on gender of the respondents. It also evident that among 82 out of 173 respondents who had married at and above median and 72 scored below median.

Among the respondents, 11 were unmarried scored below median and 8 respondents scored at and above median. Chi-square test was done to see the association between quality-of-life score and marital status of the respondents. The calculated value of χ^2 was 0.841 which was lower than tabulated value for df 1 at 0.05 level of significance which is statistically non-significant. So, it can be concluded that quality of life was not dependent on marital status of the respondents.

Table 5

Table 5			n=173
Variables	**Quality of life**		χ^2 **Value**
	<Median	**≥Median**	
Age (in years)			
≤50	52	60	0.305
>50	31	30	
Gender			
Male	61	56	20506

Female	22	34	
Marital status			
Married	72	82	0.841
Unmarried	11	8	

$\chi 2$ at df1 = 3.841, p>0.05

The Table 5 shows that among 69 out of 173 respondents who had educational qualifications at and below secondary level scored below median and 64 scored at and above median. Among the respondents having more than secondary level of educational qualification 26 scored at and above median 14 below median.

Chi -square test was done to see the association between quality-of-life score and educational qualification of the respondents. The calculated value of $\chi 2$ was 3.510 which was lower than the tabulated value 3.841 for df 1at 0.05 level of significance which is not statistically significant. So, it can be concluded that the quality of life was not dependent on educational qualification of the respondents. The data also shows that among 55 out of 173 respondents who had employed scored below median and 51 scored at and above median. Among the respondents 39 who had unemployed scored at and above median and 28 scored below median. Chi square test was done to see the association between quality-of-life score and occupation of the respondents. The calculated value of $\chi 2$ was 1.676 which was lower than the tabulated value 3.841 for df1 at 0.05 level of significance which is not statistically significant. So, it can be concluded that the quality of life was not dependent on occupation. It also evident that among 70 out of 173 respondents who had monthly family income at and below Rs 10000 scored at and above median and 70 scored below median. Among the respondents having more than Rs 10000 income per month ,20 scored at and above median and 13 scored below median. Chi square test was done to see the association between score and monthly family income of the respondents. The calculated value of chi square was 1.203 which was lower than the tabulated value 3.841 for df1 at 0.05 level of significance which is not statistically significant. So, it can be concluded that the quality of life was not dependent on monthly family income of the respondents.

Table 6

Table 6			n=173
Variables	**Quality of life**		χ^2 **Value**
	<Median	**≥Median**	
Education			
≤ Secondary	69	64	3.510
>Secondary	14	26	
Occupation			
Employed	55	51	1.676
Unemployed	28	39	
Monthly family income			
≤Rs.10000	70	70	1.203
>Rs.10000	13	20	

$\chi 2$ at df1 = 3.841, p>0.05

Data presented in Table 6 depicts that among 47 out of 173 respondents who had history of addiction scored below median and 36 scored at and above median. Among the respondents having no history of addiction 54 scored at and above median, and 36 scored below median. Chi-square test was done to find out the association between quality-of-life score and the history of addiction of the respondent. The calculated value of χ2 was 4.782 which was higher than tabulated value 3.841 for df 1 at 0.05 level of significance which is statistically significant. So, it can be concluded that the quality of life was significantly associated with addiction. The data also shows that among 60 out of 173 respondents who had duration of suffering at and below 2 years scored at and above median and 56 scored below median. Among the respondents having greater than 2 years of suffering ,30 scored at and above median and 27 scored below median.

Table 7

Table 7			n=173
Variables	**Quality of life**		χ^2 **Value**
	<Median	**≥Median**	
Addiction			
Present	47	36	4.782*
Absent	36	54	
Duration of suffering			
≤2 years	56	60	0.012
>2 years	27	30	
History of any comorbidity			
Yes	67	64	2.169
No	16	26	

χ2 at df_1 = 3.841, p>0.05

Data presented in Table 7 shows that among 57 out of 173 respondents who had taken dialysis scored at and above median and 50 scored below median. Among the respondents who did not taken dialysis 33 scored at and above median and 33 scored below median. Chi -square test was done to see the association between quality-of- life score and taking dialysis of respondents. The calculated value of χ2 was 0.174 which was lower than the tabulated value 3.841 for df 1 at 0.05 level of significance which is not statistically significant. So, it can be concluded that the quality of life was not dependent on taking dialysis of the respondents. It also depicts that among 22 out of 107 respondents who had taken dialysis below 6 months scored at and above median and 16 scored below median. Among the respondents who had taken dialysis at and above 6 months, 35 scored at and above median and 34 scored below median.

Chi-square test was done to see the association between quality-of-life score and duration of taking dialysis of the respondents. The calculated value of chi square was 0.506 which was lower than the tabulated value 3.841 for df 1 at 0.05 level of significance which is not statistically significant. So, it can be concluded that quality of life was not dependent on duration of taking dialysis.

Table 8

Table 8			n=173
Variables	**Quality of life**		χ^2 **Value**
	<Median	**≥Median**	
Taking dialysis			
Yes	50	57	0.174*
No	33	33	
Duration of taking dialysis (n=n1+n2 n1=107)			
<6months	16	22	0.506
≥6months	34	35	

χ^2 at df_1 = 3.841, p>0.05

6. DISCUSSION
6.1. DISCUSSION RELATED TO DEMOGRAPHIC CHARACTERISTICS OF CHRONIC KIDNEY DISEASE PATIENT

In the present study majority of the respondents (28.32%) belonged to the age group of 41-50 years and most of them (67.63%) were male.

The present study findings are supported by study findings of Sethi et al. (2021) observational study to evaluate health-related quality of life among adult patients maintaining haemodialysis. The study findings suggested that majority of the respondents were in the age group 31-60 years and male.

The present study findings are contrasted by Tatapudi et al. (2018) among 2,210 CKD patients aged over 18 years in Uddanam, India. The study findings suggested that majority of the respondents were in the age group of 18 to 98 years, 44.3% men and 55.7 % were women.

The findings of the present study are also consistent with the study conducted by Manavalan et al. (2017) to investigate hypertension and chronic kidney disease among 2536 people aged above 18 years from West Bengal. The result showed that 39.4% of patients were hypertensive.

6.2. DISCUSSION RELATED TO THE ASSESSMENT OF QUALITY OF LIFE AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE

Present study results revealed that 120 (69.37%) of chronic kidney disease patients are having average quality of life, 30 (17.34 %) patients with chronic kidney disease are having a good quality of life, and 23 (13.29%) patients with chronic kidney disease are having poor quality of life.

The present study findings are supported by a cross-sectional study conducted by GR NC Ganeshkumar et al. (2023) to assess quality of life and social support and hope in a tertiary care centre. The study revealed that the 70% of patients had fair quality of life,20% of patients had poor quality of life, and 10% of patients had a good quality of life.

In domain-wise distribution, it is inferred that the mean quality of life score in social relationship domain 52.77, environmental domain 50.87, Physical domain 47.10, and psychological domain 45.17 respectively.

Another study supported the present study conducted by Ravindran et al. (2020) among 530 patients with CKD undergoing MHD at 11 major centers in Kerala, South India. The study result showed hemodialysis patients were having quality of life with high scores were social relationships (51.65+21.03) followed by environmental (46.91 ± 19.29), psychological (41.07 ± 20.30), and physical health (40.17 ± 17.05).

The present study findings are contrasted by Joshi et al. (2017) among 150 CKD patients undergoing hemodialysis in Nepal. The result revealed that quality of life was better in the environmental domain then psychological, social, and physical domain respectively.

6.3. DISCUSSION RELATED TO THE ASSOCIATION BETWEEN QUALITY OF LIFE AMONG CKD PATIENTS WITH DEMOGRAPHIC VARIABLES

In the present study statistically, significant association was found between quality of life and the history of addiction of chronic kidney disease patients chi-square value is 4.782 at df 1, $p < 0.05$. There was no association found between quality of life with age, gender, marital status, education, occupation, monthly family income, and duration of suffering, etc.

The findings of the present study are also consistent with the study conducted by Michele Provenzano et al. (2021) to assess the Risk between smoking and newly diagnosed CKD. The study found that smoking significantly increases the risk of CKD.

7. CONCLUSIONS

The findings of the present study revealed that majority of the respondents had moderate quality of life due to chronic kidney disease. Addiction was significantly associated with quality of life because the impact of substance poorly affects kidney function. The findings also shows that in domain wise distribution the respondents had maximum quality of life in social domain due to family, friend, and social support.

8. LIMITATION

Conclusion of the study cannot be generalized to a large population, as the sample was relatively small due to inadequate time.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

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