RES MILITARIS Social Science Journal

QUALITY OF LIFE IN CHRONIC LIVER DISEASE PATIENTS: FINDINGS FROM A TERTIARY CARE CROSS-SECTIONAL STUDY

[1] *E. Venkateshwarulu,* [2] *D.Mounika,* [3] *G. Lavanya,* [4] *K.Prathuyusha*
[1234]*Assistant Professor*
Vaagdevi College of Pharmacy, Warangal, Telangana

ABSTRACT
Background: Chronic liver disease (CLD) significantly impacts patients' quality of life (QoL), affecting physical, psychological, and social well-being. Understanding the factors influencing QoL is crucial for improving patient care and management strategies.
Objective: This study aims to assess the QoL in patients with CLD and identify the key factors influencing their well-being at a tertiary care hospital.
Methods: A cross-sectional study was conducted at [Hospital Name], involving [sample size] patients diagnosed with CLD. Data were collected using the [specific QoL instrument, e.g., WHOQOL-BREF or SF-36], which measures various domains of QoL, including physical health, psychological health, social relationships, and environmental factors. Clinical and demographic data such as age, gender, duration of disease, and comorbidities were also analyzed.
Results: The study found that [insert significant finding, e.g., "patients with advanced stages of liver disease reported significantly lower QoL scores in physical and psychological domains"]. Factors such as [specific factors, e.g., "age, presence of ascites, and comorbid conditions"] were strongly associated with reduced QoL. Patients receiving adequate social and medical support reported better outcomes in the social and environmental domains.
Conclusion: CLD significantly impairs QoL, particularly in advanced stages of the disease. Early identification and management of factors influencing QoL can enhance the overall well-being of CLD patients. These findings underscore the need for integrated care approaches that address both clinical and psychosocial aspects.
Keywords: chronic liver disease, quality of life, cross-sectional study, tertiary care, patient outcomes.

I. INTRODUCTION

Chronic liver disease (CLD) is a progressive condition characterized by the gradual deterioration of liver function due to sustained liver injury. It encompasses a broad spectrum of diseases, including cirrhosis, hepatitis, and non-alcoholic fatty liver disease, which often lead to significant morbidity and mortality worldwide. According to the World Health Organization, liver diseases rank among the leading causes of global health burden, particularly in low- and middle-income countries where healthcare resources may be limited.
Patients with CLD often experience a multitude of physical symptoms, including fatigue, abdominal pain, and jaundice, which significantly impact their day-to-day activities. Beyond physical symptoms, the disease is associated with psychological and social challenges, such as anxiety, depression, and impaired social functioning, all of which collectively diminish the patient's quality of life (QoL). Assessing and addressing QoL in CLD patients has become increasingly important in recent years, as it provides a holistic view of the disease's impact and offers insights into improving overall patient care.
Quality of life, as a multidimensional construct, evaluates the physical, psychological, social, and

environmental well-being of an individual. In the context of CLD, it serves as a crucial indicator of the burden of disease and the effectiveness of therapeutic interventions. Despite its importance, the QoL of CLD patients remains underexplored, particularly in tertiary care settings where patients often present with advanced disease stages and complex clinical profiles.

This study aims to assess the QoL of patients with CLD using a cross-sectional approach in a tertiary care hospital. By identifying the factors that influence QoL, this research seeks to provide valuable insights for clinicians, policymakers, and caregivers to develop comprehensive management strategies that address both medical and psychosocial aspects of the disease.

II. LITERATURE SURVEY

The quality of life (QoL) in patients with chronic liver disease (CLD) has gained increasing attention in recent years, given the substantial impact of the disease on physical, psychological, and social well-being. A review of the existing literature reveals several significant findings and gaps that highlight the need for further research.

Global Burden of Chronic Liver Disease:

Studies have documented the growing prevalence of CLD worldwide, with a significant impact on health-related QoL. The World Health Organization reports liver diseases as a major cause of disability-adjusted life years (DALYs), particularly in regions with high rates of viral hepatitis, alcohol-related liver disease, and non-alcoholic fatty liver disease (NAFLD). According to Younossi et al. (2016), NAFLD alone affects nearly 25% of the global population, with notable QoL implications.

Assessment Tools for QoL in CLD:

Several validated instruments have been used to evaluate QoL in CLD patients. Common tools include the SF-36 Health Survey, Chronic Liver Disease Questionnaire (CLDQ), and WHOQOL-BREF. These tools assess various dimensions of QoL, such as physical functioning, emotional well-being, and social relationships. Research by Kanwal et al. (2014) highlighted the utility of these tools in capturing disease-specific challenges faced by CLD patients.

Factors Influencing QoL in CLD Patients:

Multiple studies have identified key factors affecting QoL in CLD patients, including disease severity, presence of complications (e.g., ascites, hepatic encephalopathy), comorbidities, and socioeconomic status. Younossi et al. (2001) found that advanced stages of liver disease are strongly associated with lower QoL scores, especially in the physical and psychological domains. Furthermore, the presence of symptoms such as fatigue and pruritus significantly exacerbates the decline in QoL.

Psychosocial Impacts of CLD:

In addition to physical symptoms, CLD patients often face considerable psychological challenges, including depression and anxiety. A study by Orr et al. (2017) demonstrated that up to 50% of CLD patients exhibit symptoms of depression, which negatively correlates with their QoL scores. Social isolation and stigma associated with liver disease further compound these challenges.

Role of Interventions in Improving QoL:

Interventions such as liver transplantation, pharmacological treatments, and lifestyle modifications have been shown to improve QoL in CLD patients. For instance, a study by Saab et al. (2015) found that patients who underwent liver transplantation reported significant improvements in all domains of QoL compared to those managed conservatively. However, access to such interventions remains a barrier in many resource-limited settings.

Research Gaps:

Despite the growing body of evidence, there are notable gaps in the literature. Limited studies focus on QoL in specific subgroups, such as patients with rare liver diseases or those in low-

income settings. Additionally, there is a lack of longitudinal studies examining changes in QoL over time and the long-term effects of various interventions.

In summary, the literature underscores the profound impact of CLD on QoL and highlights the importance of addressing both medical and psychosocial aspects of care. This study seeks to build upon existing research by exploring QoL in CLD patients at a tertiary care hospital, contributing to a more nuanced understanding of the disease burden and potential avenues for intervention.

III. MATERIALS AND METHODS

123 adult patients with chronic renal disease participated in this cross-sectional investigation. The study eliminated eighteen (18) patients. One patient had severe dementia, four patients refused to participate, three patients refused to answer all the questions, and ten patients had incomplete biochemical results. The research also eliminated those with a history of cancer, kidney transplants, severe drug use, pregnancy, and those under the age of 18 or older than 80. The MMIMSR hospital used the 36-item SF-36 (v1.3) questionnaire to assess HRQoL in 105 adult CKD patients. Dialysis patients with chronic kidney disease have validated this technique [15]. The procedure was approved by the institution's ethical committee, and each participant provided written informed permission to participate in the study.

2.1. Study Procedure

At baseline, the following biochemical data were recorded: GFR, Hb, serum creatinine, sodium, total protein, chloride, potassium, albumin, serum uric acid, and urea. Moreover, the CKD EPI Equation was used to compute GFR. The BMI (Body Mass Index) was calculated after measurements of height and body weight were taken.

The SF-36 was given to patients who came to the nephrology unit for an IPD. The research investigator recorded the replies of a number of patients who were unable to complete the SF-36 (v1.3) on their own after properly consulting with them. The KDQoL SF-36 (v1.3) questionnaire, a self-administered instrument that is neither treatment- or illness-specific, was used to measure general health-related quality of life. Each questionnaire item is scored on a 100-point scale, where a higher score indicates a better subjective health state. In addition to the basic core of the SF-12 (12 items), the KDQoL-36TM (version 1) is a condensed version that includes four items on the burden of kidney disease, twelve items on symptoms and issues of kidney disease, and eight items on consequences of kidney disease.

We used the KDQoL SF-36 (1.3) in this investigation (Table 1). The whole survey may be found in the Supplementary Materials section. A physical composite summary (PCS) is usually created by combining the physical aspects of the symptom issue list, such as the impact of renal disease, the burden of kidney disease, sexual function, sleep, job status, general health, and pain. Furthermore, a mental composite summary (MCS) is often created by combining the mental aspects of cognitive function, the significance of emotional health, patient satisfaction, the quality of social interactions, social support, dialysis staff encouragement, emotional well-being, and social function.

Table 1. Items included in KDQoL SF-36 (1.3).

Scale	Number of Items	Specific Items Included
ESRD-Targeted Areas		
Symptom problem list	12	14a–k (Lm) *
Effects of kidney disease	8	15a–h
The burden of kidney disease	4	12a–d
Work status	2	20,21
Cognitive function	3	13b,d,f
Quality of social interaction	3	13a,c,e
Sexual function	2	16a,b
Sleep	4	17,18a–c
Social support	2	19a,b

Scale	Number of Items	Specific Items Included
Dialysis staff encouragement	2	24a,b
Patient satisfaction	1	23
36-item health survey		
Physical functioning	10	13e-j
Role physical	4	4a-d
Pain	2	7,8
General health	5	1,11a-d
Emotional well being	5	9b,c,d,f,h
Role of emotional health	3	5a-c
Social function	2	6,10
Energy/Fatigue	4	9a,e,g,i

The SF-36 questionnaire allows comparisons within and between circumstances and is extensively used and approved in a variety of contexts. The National Kidney Foundation's guidelines emphasise the importance of the questionnaire's accuracy and dependability.

2.2. KDQoL SF-36 Scoring Rules

Higher scores indicate a higher quality of life when using the KDQoL-SFTM scoring procedure, which consists of converting precoded numerical responses to a range of 0–100. With 0 representing the lowest possible score and 100 representing the highest, this range is adjusted to fit the raw values of each item. The raw value is subtracted by 1, the difference is divided by 6, and the result is multiplied by 100 to record item 23, which has a pre-coded range of 1 to 7. Item 16 on the sexual function scale is very important; if the response is "no," the scale's score should be considered missing. Each scale's scores are calculated by averaging its items.

2.3. Ethical Considerations

The research proposal was carefully examined by the institutional ethics committee, which evaluated aspects including participant privacy and confidentiality, informed consent protocols, possible risks and benefits, and adherence to pertinent laws and regulations. The rights of the patients were upheld and respected. This work has been authorised by the relevant Institutional Ethics Committee [Reference number: 2333].

2.4. Statistical Analysis

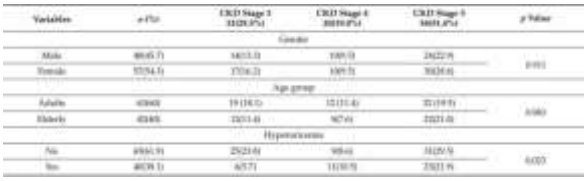
The baseline sociodemographic information and the patients' clinical features were compiled using descriptive statistics such as frequency, percentages, mean, and standard deviation. The chi-square test was employed for categorical data, and a one-way ANOVA was employed to evaluate the continuous variables according to the stages of chronic kidney disease. The link between the SF-36's dimensions and other variables was assessed using Pearson correlation. P values less than 0.05 are considered significant in statistics. Following data organisation, cleaning, coding, and entry into Microsoft Excel, SPSS version 20.0, Chicago, IL, USA, was used for analysis.

IV. RESULTS

3.1. Participants and Characteristics

The mean (±standard deviation) age of the 105 participants was 54.53 ± 13.47 years; 48 of the patients were male, and 57 were female. There were more older patients (≥60 years) in the study (n = 42). Hyperuricemia was found to be 38.1% common, with CKD stage 5 patients making up the greatest percentage (21.9%). Hyperuricemia-based CKD stages showed a statistically significant difference (p = 0.02). (Table 2).

Table 2. Distribution of baseline demographic characteristics based on CKD stages.



Patients with stage 5 CKD were older on average (55.07 ± 13.45) than those with stage 3 CKD (51.83 ± 14.87). In reference to the other laboratory results, individuals with stage 5 CKD had higher serum uric acid levels, lower haemoglobin levels, and higher baseline creatinine levels. In contrast to CKD stage 4 (87.70 ± 39.26) and stage 3 (57.54 ± 41.06), individuals with CKD stage 5 had very high urea levels (164.26 ± 82.01) (Table 3). It was determined that the average baseline estimated GFR was 21.01 ± 16.70 mL/min/1.73 m2.

Table 3. Distribution of baseline biochemical parameters based on CKD stages.

Parameters	N (100)	Stage 3 (n = 34)	Stage 4 (n = 28)	Stage 5 (n = 38)	p Value
Age	54.73 ± 13.47	51.61 ± 14.07	57.25 ± 10.90	55.87 ± 13.45	0.346
GFR (mL/min/1.73m²)	23.01 ± 16.70	44.38 ± 7.81	20.75 ± 5.90	7.08 ± 2.66	<0.05
Hb (g/dL)	8.87 ± 2.11	10.55 ± 1.75	8.72 ± 1.96	7.70 ± 1.69	<0.05
S. Creatinine (mg/dL)	4.99 ± 3.22	1.65 ± 0.29	3.50 ± 0.73	7.63 ± 2.52	<0.05
Sodium (mg/dL)	135.14 ± 6.57	134.25 ± 7.62	136.25 ± 5.29	135.27 ± 6.37	0.567
Total Protein (g/dL)	5.87 ± 1.19	5.18 ± 1.19	5.34 ± 1.12	6.01 ± 0.97	<0.05
Chloride (mg/dL)	100.20 ± 11.29	97.98 ± 18.42	101.00 ± 5.78	101.37 ± 6.31	0.410
Potassium (mg/dL)	4.57 ± 5.76	4.36 ± 0.60	4.70 ± 0.84	5.63 ± 5.16	0.436
Albumin (g/dL)	3.25 ± 0.60	2.98 ± 0.89	3.26 ± 0.47	3.59 ± 0.52	0.030
S. Uric acid (mg/dL)	7.53 ± 7.06	5.98 ± 1.64	8.80 ± 5.03	6.92 ± 8.45	<0.05
S. Urea (mg/dL)	108.17 ± 88.07	57.54 ± 41.06	87.51 ± 59.26	164.26 ± 82.21	<0.05

3.2. Complications Associated with CKD Patients

The most common problems in this research were found to be diabetes mellitus (61.9%), hypertension (56.2%), chronic glomerulonephritis (7.6%), chronic pyelonephritis (6.7%), and polycystic kidney disease (5.7%). Obstructive uropathy and other less prevalent causes include miscellaneous uropathy (Figure 1).

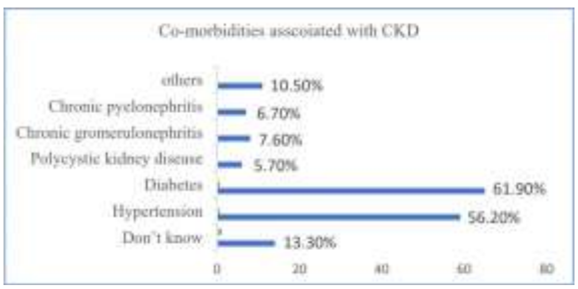


Figure 1. This figure provides a detailed overview of with and without co-morbidities associated with CKD.

In 39.04% of the patients, both diabetes and hypertension were present. However, in addition to diabetes and hypertension, 1.90% of patients also had chronic glomerulonephritis or chronic pyelonephritis. Hypertension and obstructive nephron disease were linked to different aetiologies in 2.85% of individuals. Twenty percent of patients had an undefined, other, non-identified, and other reason listed. Hypertension is linked to polycystic kidney disease, chronic glomerulonephritis, and chronic pyelonephritis in 6.66% of patients. Chronic glomerulonephritis, polycystic kidney disease, and chronic pyelonephritis were found to coexist with diabetes in 3.80% of patients.

3.3. Evaluation of Health-Related Quality of Life in Patients with CKD

The findings showed that there is a gradual impairment in the HRQoL scores across all scoring manual parameters. The HRQoL dimension scores at different stages of CKD are displayed in Table 4. Patients in CKD stage 3 were compared to those in stages 4 and 5 ($p < 0.005$). (Table 4).

Table 4. HRQoL dimension scores in different stages of CKD.

HRQoL Dimensions	Total (n = 100)	CKD Stage 3 (n = 34)	CKD Stage 4 (n = 28)	CKD Stage 5 (n = 38)	p Value
Symptom problem list	67.31 ± 15.23	90.07 ± 8.12	59.27 ± 6.02	37.71 ± 7.22	<0.005
Effect of kidney disease	44.08 ± 23.03	70.45 ± 4.65	39.99 ± 11.38	23.81 ± 6.06	<0.005
The burden of kidney disease	38.23 ± 19.69	48.88 ± 23.41	45.62 ± 16.61	35.76 ± 12.34	<0.005
Work status	32.38 ± 37.32	99.67 ± 41.67	23.40 ± 25.13	21.29 ± 30.09	<0.005
Cognitive function	69.14 ± 22.09	91.19 ± 9.66	65.03 ± 7.91	19.87 ± 8.03	<0.005
Quality of social interaction	57.20 ± 22.02	87.95 ± 6.79	57.66 ± 6.91	19.87 ± 8.03	<0.005
Sexual function	0.000	0.000	0.000	0.000	<0.005
Sleep	49.97 ± 17.50	72.27 ± 8.94	42.12 ± 3.91	40.15 ± 11.08	<0.005
Social support	75.99 ± 23.12	100.00 ± 0.00	77.50 ± 18.94	71.66 ± 16.06	<0.005
Dialysis staff encouragement	96.07 ± 16.22	91.12 ± 8.23	85.00 ± 0.00	78.06 ± 33.09	<0.005
Overall health	42.76 ± 16.03	60.33 ± 7.06	47.00 ± 7.32	38.11 ± 7.60	<0.005
Patient satisfaction	42.53 ± 16.66	61.79 ± 10.07	58.33 ± 8.53	52.46 ± 9.05	<0.005
Physical functioning	34.05 ± 20.03	72.09 ± 7.82	39.23 ± 8.21	15.58 ± 7.16	<0.005
Role of physical health	16.66 ± 31.53	47.41 ± 43.59	45.00 ± 22.76	0.09 ± 0.00	<0.005
HRQoL Dimensions	**Total (n = 100)**	**CKD Stage 3 (n = 34)**	**CKD Stage 4 (n = 28)**	**CKD Stage 5 (n = 38)**	**p Value**
Pain	37.36 ± 34.25	87.18 ± 9.75	33.00 ± 8.41	10.97 ± 7.46	<0.005
General health	33.90 ± 19.28	54.65 ± 5.94	25.75 ± 5.68	22.96 ± 5.09	<0.001
Emotional well-being	38.49 ± 28.25	77.16 ± 6.21	46.80 ± 6.61	18.05 ± 4.23	<0.001
Role of emotional health	31.11 ± 28.22	56.99 ± 15.58	31.31 ± 16.75	8.02 ± 14.58	<0.001
Social functioning	33.83 ± 32.98	79.83 ± 4.34	46.27 ± 10.33	7.40 ± 8.79	<0.001
Energy fatigue	37.37 ± 7.38	43.58 ± 5.68	40.00 ± 0.99	32.96 ± 4.50	<0.001
SF12 PHYSICAL COMPOSITE	31.77 ± 8.46	42.02 ± 6.48	32.69 ± 4.78	25.78 ± 3.02	<0.001
SF12 MENTAL COMPOSITE	39.44 ± 10.00	47.94 ± 3.59	40.24 ± 4.63	20.70 ± 4.65	<0.001

Additionally, the current study showed that when a patient progresses into higher stages of CKD, the HRQoL score domains—such as the symptom problem list, the effect of renal disease, and the burden of kidney disease—decline considerably and gradually ($p < 0.005$). Work status, sleep, and overall health all showed a comparable trend ($p < 0.005$).

Cognitive function, social support, emotional well-being, overall health, patient satisfaction, social functioning, pain, the role of physical health, social interaction, emotional well-being, social support, energy fatigue, and the quality of dialysis staff encouragement were also found to differ statistically significantly ($p < 0.005$). This study also looked at the relationships between different factors and the HRQoL tool's mental and physical composite summaries (Table 5).

Table 5. Correlation between PCS and various covariates.

Parameter	Correlation Coefficient	*p* Values
Age	−0.031	0.755
GFR (mL/min/1.73 m^2)	0.512 **	<0.005
Hb (g/dL)	0.378 **	<0.005
S. Creatinine (mg/dL)	−0.665 **	<0.005
S. Sodium (mg/dL)	−0.140	0.155
Total Protein (g/dL)	−0.257 **	0.008
S. chloride (mg/dL)	−0.256 **	0.009
S. Potassium(mg/dL)	−0.066	0.504
Albumin (g/dL)	−0.167	0.088
S. Uric acid (mg/dL)	−0.117	0.236
S. Urea (mg/dL)	−0.450 **	<0.005

Age, GFR, Hb, serum creatinine, sodium, total protein, chloride, potassium, albumin, uric acid, urea, and the physical composite summary are all correlated in Table 5. GFR, Hb, serum creatinine, total protein, chloride, and urea all showed statistically significant correlations ($p < 0.05$). GFR ($r = 0.521$, $p < 0.005$) and Hb ($r = 0.378$, $p < 0.005$) were positively correlated with the PCS, whereas creatinine ($r = −0.665$, $p < 0.005$), sodium ($r = −0.140$), total protein ($r = −0.257$, $p < 0.005$), chloride ($r = −0.256$, $p < 0.005$), potassium ($r = −0.066$, $p = 0.008$), albumin ($r = −0.167$, $p = 0.009$), uric acid ($r = −0.117$, $p = 0.236$), and urea ($r = −0.450$, $p < 0.005$) were negatively correlated.

Age, GFR, Hb, serum creatinine, sodium, total protein, potassium, chloride, albumin, uric acid, urea, and the mental composite summary are all correlated in Table 6. GFR, Hb, serum creatinine, total protein, albumin, and urea all showed statistically significant correlations ($p < 0.05$). Haemoglobin ($r = 0.488$, $p < 0.005$) and GFR ($r = 0.836$, $p < 0.005$) were positively correlated with the MCS. Serum creatinine ($r = -0.769$, $p < 0.005$), total protein ($r = -0.305$, $p = 0.002$), albumin ($r = -0.279$, $p = 0.004$), and urea ($r = -0.640$, $p = 0.004$), on the other hand, showed a negative connection (Table 6).

Table 6. Correlation between MCS and various covariates.

Parameter	Correlation Coefficient	*p* Values
Age	−0.117	0.234
GFR (mL/min/1.73 m^2)	0.836 **	<0.005
HB (g/dL)	0.488 **	<0.005
S. Creatinine (mg/dL)	−0.769 **	0.001
S. Sodium (mg/dL)	−0.042	0.673
Total Protein (g/dL)	−0.305 **	0.002
S. chloride (mg/dL)	−0.59	0.552
S. Potassium(mg/dL)	−0.162	0.099
Albumin (g/dL)	−0.279 **	0.004
S. Uric acid (mg/dL)	−0.124	0.206
S. Urea (mg/dL)	−0.640 **	<0.005

Impact of PCS and MCS Quality-of-Life Domains on Diabetes and Hypertension Associated with Chronic Kidney Disease

To determine the impact of PCS and MCS on CKD-associated conditions such diabetes and hypertension, a logistic regression analysis was conducted. 10.0% (Nagelkerke R2) of the variance in CKD-associated diabetes cases was explained by the model, which was able to identify 62.9% of those instances. Although the results were not statistically significant, increasing PCS ($\beta = -0.038$; $p = 0.240$) and MCS ($\beta = -0.032$; $p = 0.203$) was linked to a reduction in diabetes associated with CKD. The model accurately categorised 70.5% of instances of CKD-associated hypertension and explained 22.5% (Nagelkerke R2) of the variation. A reduction in CKD-associated diabetes was linked to increasing PCS ($\beta = -0.031$; $p = 0.353$) and MCS ($\beta = -0.068$; $p = 0.011$); however, only MCS demonstrated a statistically significant connection.

V. DISCUSSION

When evaluating the efficacy of treatment for chronic illnesses, especially in patients with advanced chronic kidney disease (CKD), health-related quality of life is becoming a more and more important metric. Medical decisions that include patients' physical, social, and emotional needs are heavily influenced by their subjective evaluations of the illness. Inadequate nutrition, anaemia, depression, sleep problems, apathy, decreased physical and sexual functioning, co-morbidities including diabetes, hypertension, and cardiovascular illnesses, and other variables all play a part in this loss in HRQoL. HRQoL

has up to now only been thought of as a result of a person's disease. HRQoL is recognised as a health system indicator and is becoming more important as a patient-centered metric. Despite this, little is known about the precise effects of renal illness on HRQoL and if HRQoL predictors might be the focus of future therapies. In this study, we examined health-related quality of life and assessed potential risk factors for deteriorating QoL in CKD patients at a public teaching hospital. The results of the study showed that HRQoL decreased clinically significantly in CKD patients, and that HRQoL dimensions progressively deteriorated as the patient advanced to ESRD. This study also shown that CKD places several restrictions on patients' daily lives, especially with regard to their physical and mental functioning, even in the early stages of the illness. Pei et al. corroborated these findings and pointed out that CKD patients had considerably lower HRQoL, which is a predictor of future mortality [16].

The findings also showed a substantial correlation between HRQoL scores and factors such age, sex, CKD stages, hyperuricemia, and anaemia. A statistically significant variation in HRQoL ratings depending on CKD stages was found for factors such GFR, serum creatinine, total protein, and haemoglobin levels. Age [17,18], gender [19], concurrent diseases including diabetes [17], anaemia [20], and residual renal function [21] are among the clinical and demographic factors that have been shown in several studies to affect HRQoL.

Poor clinical outcomes are associated with anaemia, which is rather prevalent in CKD patients [22]. Anaemia was linked in the current study to a decline in HRQoL metrics. These results were supported by Finkelstein et al., who also pointed out that anaemia in CKS patients is associated with a poorer HRQoL [20]. Additionally, erythropoietin-stimulating agent (ESA) treatment for anaemia in chronic kidney disease (CKD) has been shown in multiple trials to enhance health-related quality of life [23–25]. CKD has a substantial influence on HRQoL, with the physical domains posing the most obstacles. The HRQoL domains were also assessed in this study according to the stages of CKD.

GFR and Hb were positively correlated with the physical composite summary in this investigation, whereas creatinine, sodium, total protein, chloride, potassium, albumin, uric acid, and urea were negatively correlated. But according to the mental composite summary, there was a negative link with serum creatinine, total protein, albumin, and urea, and a positive correlation with haemoglobin and GFR. The results published by Pagels et al. [26] and Aggarwal et al. [27] corroborated this. Furthermore, although the results were not statistically significant, they did indicate a correlation between a decrease in CKD-associated illnesses and rising PCS and MCS levels. The cause can be the tiny sample size.

Furthermore, when eGFR decreased, HRQoL ratings steadily and severely declined, with the most severe impairment occurring in CKD stage 5. This implies a connection between poor HRQoL across all parameters and diminishing kidney function (as measured by eGFR). Although there was a considerable difference between the two, the physical composite summary scores were worse than the mental ones. These results were consistent with the findings of Aggarwal et al. [27].

The most common problems in this research were found to be diabetes mellitus (61.9%), hypertension (56.2%), chronic glomerulonephritis (7.6%), chronic pyelonephritis (6.7%), and polycystic kidney disease (5.7%). Other less frequent causes include obstructive uropathy and nonspecific uropathy. It is easy to forget that patients' satisfaction with their care and mental health are just as important, if not more so, than meeting

clinical or quantitative laboratory goals. Here, we discovered that HRQoL, a crucial predictor of patient-centered outcomes, was worse in CKD patients, especially those towards the end of the disease. This suggests that quality of life plays a substantial role in both positive and poor outcomes for these patients.

Study limitations: A follow-up, which would have enabled a better design for identifying the worse quality of life and underlying reasons, was not possible due to the cross-sectional design of the study. Furthermore, the reasons of the patients' low quality of life could not be sufficiently highlighted because of the quantitative form of the data. Focus groups or in-depth interviews might have provided a deeper understanding of these factors. Furthermore, care should be used when extrapolating the results because the study primarily focused on one institution and had a lower sample size.

VI. CONCLUSIONS

This study highlights the profound impact of chronic liver disease (CLD) on the quality of life (QoL) of patients, emphasizing the multidimensional nature of the disease burden. CLD significantly impairs physical, psychological, social, and environmental well-being, with disease severity, complications, and psychosocial factors playing pivotal roles.

The findings underscore the need for a holistic approach to patient care, integrating medical treatment with psychosocial support to improve QoL. Early identification of at-risk patients and targeted interventions, such as counseling, nutritional support, and management of comorbidities, can substantially enhance patient outcomes.

Furthermore, this study contributes to the growing body of evidence advocating for the use of QoL assessments as an essential component of routine care for CLD patients. Incorporating QoL metrics into clinical practice and policy planning can ensure more comprehensive and patient-centered management strategies.

Future research should focus on longitudinal studies to understand the dynamic changes in QoL over the disease course and evaluate the long-term efficacy of various interventions. Expanding research in diverse settings, particularly in resource-limited regions, is crucial to address the global burden of CLD effectively.

By addressing both medical and psychosocial aspects of CLD, healthcare providers can improve the overall well-being and outcomes of patients, ultimately enhancing their quality of life.

REFERENCES

1. Younossi, Z. M., Koenig, A. B., Abdelatif, D., Fazel, Y., Henry, L., & Wymer, M. (2016). Global epidemiology of nonalcoholic fatty liver disease—Meta-analytic assessment of prevalence, incidence, and outcomes. Hepatology, 64(1), 73-84. https://doi.org/10.1002/hep.28431
2. Kanwal, F., Tapper, E. B., Ho, C., Asrani, S. K., Ovchinsky, N., Vivanco, M., & Vilar-Gomez, E. (2014). Measuring quality of care in patients with cirrhosis: Current landscape and future directions. Hepatology, 60(1), 346-353. https://doi.org/10.1002/hep.26908
3. Younossi, Z. M., Guyatt, G., Kiwi, M., Boparai, N., & King, D. (2001). Development of a disease-specific questionnaire to measure health-related quality of life in patients with chronic liver disease. Gut, 45(2), 295-300. https://doi.org/10.1136/gut.45.2.295
4. Orr, J. G., Homer, T., Ternent, L., Newton, J. L., Jones, D. E., & Hudson, M. (2017). Health-related quality of life in people with advanced chronic liver disease. Journal of Hepatology, 67(5),

989-997. https://doi.org/10.1016/j.jhep.2017.05.029

5. Saab, S., Ronnie, T., Ghobrial, M., Busuttil, R. W., & Durazo, F. (2015). Health-related quality of life outcomes after liver transplantation. Liver Transplantation, 21(3), 239-246. https://doi.org/10.1002/lt.24051
6. World Health Organization (WHO). (2022). Global health estimates: Deaths by cause, age, sex, by country, and by region, 2000-2020. Retrieved from https://www.who.int/data
7. Reddy, K. R., & Wong, F. (2018). Quality of life assessment in chronic liver disease. Journal of Clinical Gastroenterology, 52(Suppl 1), S38-S41. https://doi.org/10.1097/MCG.0000000000001017
8. Schiff, E. R., Sorrell, M. F., & Maddrey, W. C. (2017). Diseases of the Liver and Biliary System. 12th Edition. Wiley-Blackwell.
9. Tandon, P., & Watt, K. D. (2019). Cirrhosis and health-related quality of life: Recognizing the importance of patient-centered outcomes. Hepatology International, 13(6), 777-785. https://doi.org/10.1007/s12072-019-09991-w
10. European Association for the Study of the Liver (EASL). (2021). Clinical practice guidelines on the management of chronic liver diseases. Journal of Hepatology, 75(2), 356-386. https://doi.org/10.1016/j.jhep.2021.04.013