Journal of Young Pharmacists, 2026; 18(2):563-568.
https://www.jyoungpharm.org

Original Article

A Cross-Sectional Study on the Assessment of Health-Related Quality of Life in Patients with Chronic Liver Disease at Tertiary Care Teaching Hospital

Rajesh Hadia[1,*], Kunjal Parmar[1], Jay Rane[1], Narayan Saijwani[1], Pradeep Reddy[2], Hemraj Singh Rajput[1], Vikas Raman Chandrakar[3]

[1]Department of Pharmacy, Faculty of Pharmacy Practice, Sumandeep Vidyapeeth (Deemed to be University), Vadodara, Gujarat, INDIA.
[2]Department of General Medicine, SBKS Medical Institute and Research Center, Sumandeep Vidyapeeth (Deemed to be University), Vadodara, Gujarat, INDIA.
[3]Clinical Research, Managing Director, KV Clinical Research Pvt. Ltd., Raipur, Chhattisgarh, INDIA.

ABSTRACT

Background: Patients with Chronic Liver Disease (CLD) had large numbers of symptoms which affect their life activities and Health Related Quality of Life (HRQoL). Quality of life measures cover a wide range of aspects of life that can be adversely affected by ill health, such as physical functioning, emotional well-being and ability to undertake work and social activities. The main aim of the study was to assess the health-related quality of life in patients with chronic liver disease with the help of CLDQ. **Materials and Methods:** An observational, Cross-sectional Study was conducted in Department of General Medicine, Dhiraj General Hospital which includes patients, 18-65 years of age clinically diagnosed with CLD. CLDQ (Chronic Liver Disease Questionnaire) scale was used to assess the Quality of Life. **Results:** For all domains of CLDQ, the HRQoL (Health Related Quality of Life) declined significantly with worsening of disease severity. HRQoL scores of CLDQ domains like abdominal symptoms and fatigue were also more declined in viral hepatitis patients, abdominal symptoms and activity were also more declined in alcoholic and fatigue and activity were also more declined in non-alcoholic patients. **Conclusion:** In our study it was found that chronic liver disease significantly reduces HRQL, and this impact differ by age, gender and severity of disease. Impairment of HRQoL does not differ by type of disease.

Keywords: Alcoholic Liver, Chronic Liver Disease Questionnaire (CLDQ), Chronic Liver Disease, Health-Related Quality of Life, Liver Cirrhosis, Viral Hepatitis.

Correspondence:
Dr. Rajesh Hadia
Department of Pharmacy, Faculty of Pharmacy Practice, Sumandeep Vidyapeeth (Deemed to be University), Vadodara-391760, Gujarat, INDIA.
Email: docrajesh.hadia@gmail.com

Received: 21-02-2026;
Revised: 03-04-2026;
Accepted: 29-05-2026.

INTRODUCTION

The liver is the largest organ in the human body, and it is involved in a variety of bodily tasks ranging from protein synthesis to cholesterol and glucose metabolism. Liver disease is a condition of abnormal liver functioning that causes illness and it can cause damage to the body which is called as hepatic disease. Chronic Liver Disease (CLD) is a continual process of liver parenchyma inflammation, destruction, and regeneration that leads to fibrosis and cirrhosis. Chronic liver disease is one of the frequent causes of death, mainly in the developing world (National Center for Biotechnology Information [NCBI], 2020; Dienstag, 2018; Gutteling *et al*., 2007). Over the last few decades, monitoring Quality of Life (QoL) of patients with disorders has been mainstream clinical practice, as a consequence of greater survival of patients with chronic conditions. In 1947, the World Health Organisation expanded the definition of health and included an absence of disease in addition, of complete state of physical, mental, and social wellbeing. It has been reported that the presence of CLD reduces HRQoL, and that HRQoL deteriorates as the severity of the disease worsens. HRQoL ranges from negatively valued aspects of life (death) to positively valued aspects of life (happiness) (Gutteling *et al*., 2007; Sobhonslidsuk *et al*., 2006; Younossi *et al*., 2007). HRQoL mainly consists of physical, social and mental components, each of which includes multiple subcomponents. Measurement of HRQoL is done by means of standardised, self-administered questionnaires (Gutteling *et al*., 2007). However, a recent study found that current mental illness and medical co-morbidities were drivers of HRQoL decline, but not the severity of liver disease (Häuser *et al*., 2004). In CLD, the impact of socioeconomic determinants and health perception on HRQL remained unknown. One of the most powerful predictors of death is a patient's self-rating of their own health (Wilson and Cleary, 1995). Despite of being severe and revelence of health-related problem associated with liver disease;

DOI: 10.5530/jyp.20260019

there is a lack of information about quality of life in CLD patients. The present study enables to assess factor associated with physical and mental health and also overall quality of life.

MATERIALS AND METHODS

This was a cross-sectional observational study conducted in between Jan 2020 to June 2021 at Department of General Medicine, Dhiraj General Hospital, Vadodara. Patient enrolment was started after the approval of Sumandeep Vidyapeeth Institutional Ethics Committee (SVIEC/ON/Phar/BNPG20/21009). Patients diagnosed with CLD was selected from General Medicine. Cases was selected on the basis of inclusion and exclusion criteria. Once the cases suitable for the study, their voluntary consent was taken by PI. Information was collected by PI in a face-to-face interview with subjects and their family members and patient medical records. Patients were assured that all information and records will be kept confidential. Patients with CLD had their Health-Related Quality of Life assessed using the CLDQ consists of 6 domains: Abdominal Symptoms (AS), Fatigue (FA), Systemic Symptoms (SS), Activity (AC), Emotional Function (EF) and Worry (WO) are the many types of symptoms that can occur (WO). All gathered data was transcribed into Microsoft Excel. After the data collection, all the data was exported to statistical software for statistical analysis. p value of ≤ 0.05 was considered as significant.

RESULTS

This study was carried out in the in-patients of general ward, Dhiraj General Hospital, Sumandeep Vidyapeeth Deemed to be University, Vadodara. In our study 50 subjects were included. Out of 50 participants, 41(82%) were Male and 9(18%) were Female. In this study, the age varies from 18 to 70 years with mean age of 42 years. The maximum number of patients were from 31-40 years (n=18, 36%). In this study, 3 main types of CLD patients were included, (1) Viral, (2) Alcoholic and (3) Non-alcoholic. Where maximum number of patients were Alcoholic as mentioned in Table 1.

In this study, 6 viral hepatitis patients were included. Out of 6 patients, 3 patients were developed cirrhosis. The HRQoL (Health Related Quality of Life) decreased significantly with deteriorating disease severity for all dimensions of the CLDQ (Chronic Liver Disease Questionnaire). HRQL scores of CLDQ abdominal symptoms domain (3.61±1.6) and fatigue domain (3.83±0.48) were also more declined in viral hepatitis patients. In this study, 29 alcoholic liver disease patients were included. Out of 29 patients, 17 patients were developed cirrhosis. In this group of patients, HRQoL scores of CLDQ abdominal symptoms domain (3.75±1.5) and activity domain (3.70±1.1) were also more declined. In this study, 15 non-alcoholic liver disease patients were included. Out of 15 patients, 10 patients were diagnosed with cirrhosis. In this group of patients, HRQoL scores of CLDQ fatigue domain (3.75±0.6) and activity domain (3.78±0.9) were also more declined (Table 2).

In CLDQ, abdominal symptoms domain (3.69±1.52) and fatigue domain (3.82±0.95) were relatively more declined in cirrhosis patients compare to non-cirrhosis patients. Overall HRQL score of CLDQ scale had no major difference between cirrhosis and non-cirrhosis patients (Table 3).

Female patients had higher impairment in HRQoL for the abdominal symptoms (2.78±1.09) domain of CLDQ. Male patients had higher impairment in HRQL for the activity (3.83±0.96) domain of CLDQ. In both gender, there were lower impairment in worry (Male-5.57±0.82; Female-4.84±0.96; p= 0.024) domain of CLDQ. There was no major difference in HRQL for overall CLDQ score (p=0.037) between gender group (Table 4).

In this study, Patients with all age group had less impaired HRQL for the worry domain of CLDQ scale. In the present data, HRQL for the overall CLDQ score was more impaired with increasing age of patients. Patients with age group of 18-30 years had less impairment in systemic symptoms domain of CLDQ (Table 5).

DISCUSSION

Our study indicates the diverse ways in which Chronic Liver Disease (CLD) affects the lives of the patients. CLD is a progressive deterioration of liver functions for more than six months, which includes synthesis of clotting factors, other proteins, detoxification of harmful products of metabolism and exertion of bile. The scale named the Chronic Liver Disease Questionnaire (CLDQ) was utilized for surveying the patient's Health Related Quality of Life (HRQoL) (Dienstag, 2018). In this study, A total 50 participants were included in this study, out of 50 participants, 41(82%) were male and 9(18%) were female, the age varies from 18 to 70 years with Mean (M) age of 42 years. The maximum numbers of patients were from 31-40 years age group. Many other studies are also having similar results according to our study. Souza NP (2015) led an investigation to assess the HRQL of patients with CLD. In their study, emotional function received higher mean chronic liver diseases questionnaire score, while abdominal symptoms received lower ratings. As the resulted of people had high mean CLDQ scores, inferring poor HRQoL. According to our study we also found same results, the higher mean chronic liver disease questionnaire scores were found as well as less impairment in HRQoL scores were found in our study (Souza *et al.*, 2015). An investigation was performed by gutteling JJ (2010), to evaluate the interrelationships of different mental variables and HRQoL in patients with CLD. As indicated by their discoveries, Depression which is largely determined by low self-efficacy and possibly by use of maladaptive coping strategies influenced HRQoL in three groups of liver patients and HRQoL in CLD patients may be positively influenced by enhancing coping and self-efficacy skills, thus improving levels of depression. In comparison to our

study, we discovered no evidence of link between psychological characteristics such as depression and patients we used (Gutteling *et al.*, 2010). An examination was performed by Gutteling JJ (2006), to evaluate the effect of determinants of HRQoL in patients with chronic liver disease. In their investigation, results shows that HRQoL in CLD patients is clearly determined by disease severity, joint pain, depression, decreased appetite, and fatigue. Comparing with our study we found that over all HRQoL score of CLDQ scale had no major difference between cirrhosis and non-cirrhosis patients (Gutteling *et al.*, 2006). Younossi ZM *et al.* (1999) embraced the investigation to make and assess a disease specific instrument for assessing HRQoL in patients with CLD. The result reveal that patients found CLDQ straightforward and simple to complete in 10 min when presenting, and that CLDQ is brief, easy to administer and produces both a summary score and domain score and correlates with the severity. In comparison with our study, we found that CLDQ is very easy to examine with the patients and severity score is in cirrhotic patients (4.28±0.98) and in non-cirrhotic patients (4.46±0.53), so overall HRQL score of CLDQ scale had no major difference between cirrhotic and non-cirrhotic patients in our study (Younossi *et al.*, 1999). The CLDQ is a disease specific instrument especially designed to assess HRQoL in patients with CLD. In our study, we use this score for determining the all the factors and data of CLD patients. In our study we included all 6 domains of CLDQ scale were correlated to one another. The domains include abdominal symptoms, fatigue, systemic symptoms, activity, emotional function and worry to find out the CLDQ score of all the parameters and factors (Schulz *et al.*, 2008). A study was performed by DAN AA (2007), to develop and assess the relative impact of Non-Alcoholic Fatty Liver Disease (NAFLD) on Healthy Related Quality of Life (HRQoL) compared to other chronic liver disease has not been

Table 1: **Demographic details of patients.**

Gender		No. of patients (%)		Chi-square value	*p*-value
Male		41 (82%)		20.48	<0.00001
Female		9 (18%)			
Age Range	Female (%)	Male (%)	No. of patients (%)		
18-30	0 (0%)	8 (100%)	8 (16%)	7.609	0.055
31-40	1 (5.56%)	17 (94.44%)	18 (36%)		
41-50	5 (31.25%)	11 (68.75%)	16 (32%)		
>50	3 (37.5%)	5 (62.5%)	8 (16%)		
Types of CLD		No. of patients (%)			
Viral		6 (12%)		14.588	0.00068
Alcoholic		29 (58%)			
Non-Alcoholic		15 (30%)			
Total		50 (100%)			
Severity of disease		No. of patients (%)			
Cirrhosis		29 (58%)		1.28	0.258
Non-Cirrhosis		21 (42%)			
Total		50 (100%)			

Note: $p<0.05$ = significant

Table 2: **CLDQ score.**

	CLDQ (mean ± SD)			
AS	3.61±1.6	3.75±1.5	4.04±1.3	0.759
FA	3.83±0.48	4.01±1.1	3.75±0.6	0.621
SS	5.10±0.58	4.59±1.2	4.83±1.3	0.581
AC	4.17±0.8	3.70±1.1	3.78±0.9	0.569
EF	4.29±0.8	4.50±1.0	4.43±0.8	0.884
WO	5.47±0.8	5.31±1.0	5.68±0.8	0.427
Overall CLDQ score	4.41±0.5	4.31±0.9	4.42±0.8	0.907

Note: $p< 0.05$ = significant.
AS stands for Abdominal Symptoms, FA stands for Fatigue, SS stands for Systemic Symptoms, EF stands for Emotional Function, AC stands for Activity, WO stands for Worry, CLDQ stands for Chronic Liver Disease Questionnaire.

fully explored and to compare the domain scores of the 29-item CLDQ for patients with NAFLD to those with chronic hepatitis B and chronic hepatitis C. Study was performed using methods as a HRQL questionnaire, CLDQ was routinely administered to patients attending liver clinic and scores for each of the six CLDQ domains were compared using one way ANOVA and multiple regression. The results are noted as complete data available for 237 patients. NAFLD patients scored lowest on multiple CLDQ domains. According to our study we also found the same results as NAFLD patients scored lowest on multiple domains of CLDQ. This study concluded that NAFLD patients had significantly lower quality of life scores compared with patients with hepatitis B and hepatitis C on multiple CLDQ domains (Bondini *et al.*, 2007; Dan *et al.*, 2007; Labenz *et al.*, 2019). A study was performed by Labenz C (2019), to determine differences in HRQOL between patients with compensated and decompensated liver cirrhosis and to identify potentially treatable factors associated with HRQOL. A total 218 patients with liver cirrhosis were enrolled into this study and CLDQ was used to assess HRQOL. The results of this study are found as difference between scores of patients of compensated and decompensated as (CLDQ total score 5.6 vs 4.8, $p<0.001$) associated with impaired HRQoL (all $p<0.05$). Comparing with our study we found patients associated with impaired HRQoL (all $p<0.05$).

Table 3: CLDQ score in cirrhosis and non-cirrhosis patients.

Dimension	Severity	N	Mean	Std. Deviation	*t*-value	*p*-value
AS	Cirrhosis	29	3.69	1.52	-0.753	0.455
	Non-Cirrhosis	21	4.00	1.31		
FA	Cirrhosis	29	3.82	0.95	-0.868	0.390
	Non-Cirrhosis	21	4.04	0.75		
SS	Cirrhosis	29	4.63	1.34	-0.687	0.495
	Non-Cirrhosis	21	4.86	0.86		
AC	Cirrhosis	29	3.71	1.05	-0.577	0.567
	Non-Cirrhosis	21	3.87	0.85		
EF	Cirrhosis	29	4.43	1.03	-0.232	0.817
	Non-Cirrhosis	21	4.49	0.75		
WO	Cirrhosis	29	5.38	0.92	-0.568	0.573
	Non-Cirrhosis	21	5.52	0.84		
Overall CLDQ score	Cirrhosis	29	4.28	0.98	-0.793	0.432
	Non-Cirrhosis	21	4.46	0.53		

Note: $p < 0.05$ = significant.

Table 4: Gender wise distribution of CLDQ scoring.

Dimension	Gender	N	Mean	Std. Deviation	*t*-value	*p*-value
AS	Male	41	4.05	1.41	2.542	0.014
	Female	9	2.78	1.09		
FA	Male	41	3.97	0.87	0.930	0.357
	Female	9	3.67	0.89		
SS	Male	41	4.84	1.08	1.584	0.120
	Female	9	4.18	1.43		
AC	Male	41	3.83	0.96	0.769	0.446
	Female	9	3.56	1.00		
EF	Male	41	4.55	0.89	1.563	0.125
	Female	9	4.03	0.93		
WO	Male	41	5.57	0.82	2.338	0.024
	Female	9	4.84	0.96		
Overall CLDQ score	Male	41	4.47	0.80	2.144	0.037
	Female	9	3.84	0.77		

Note: $p<0.05$ = significant.

Table 5: Age wise distribution of CLDQ score.

Dimension	Age group (years)	N	Mean	Std. Deviation	Minimum	Maximum	*p*-value
AS	18-30	8	4.54	0.89	2.67	5.00	0.05
	31-40	18	4.24	1.60	1.67	6.67	
	41-50	16	3.19	1.36	1.33	5.00	
	>50	8	3.42	1.14	1.67	5.00	
	Total	50	3.82	1.43	1.33	6.67	
FA	18-30	8	4.00	0.58	3.20	5.00	0.276
	31-40	18	4.19	0.97	2.80	6.20	
	41-50	16	3.74	0.84	2.40	5.40	
	>50	8	3.55	0.89	2.20	4.80	
	Total	50	3.91	0.87	2.20	6.20	
SS	18-30	8	5.33	0.77	4.00	5.80	0.394
	31-40	18	4.74	1.14	2.60	6.20	
	41-50	16	4.55	1.25	2.20	6.20	
	>50	8	4.43	1.32	1.80	5.80	
	Total	50	4.72	1.16	1.80	6.20	
AC	18-30	8	3.79	0.50	3.00	4.33	0.042
	31-40	18	4.24	0.96	2.33	6.00	
	41-50	16	3.54	0.99	2.00	5.00	
	>50	8	3.21	0.92	1.67	4.33	
	Total	50	3.78	0.96	1.67	6.00	
EF	18-30	8	4.73	0.43	3.88	5.13	0.765
	31-40	18	4.41	1.06	2.63	6.38	
	41-50	16	4.46	0.88	2.63	5.88	
	>50	8	4.25	1.04	2.50	5.50	
	Total	50	4.45	0.91	2.50	6.38	
WO	18-30	8	5.88	0.51	4.80	6.40	0.461
	31-40	18	5.41	0.96	3.60	6.20	
	41-50	16	5.38	0.81	4.00	6.60	
	>50	8	5.20	1.11	3.00	6.20	
	Total	50	5.44	0.88	3.00	6.60	
Overall CLDQ score	18-30	8	4.71	0.48	3.86	5.09	0.178
	31-40	18	4.54	0.87	2.79	6.17	
	41-50	16	4.14	0.82	2.53	5.43	
	>50	8	4.01	0.86	2.42	5.03	
	Total	50	4.35	0.82	2.42	6.17	

Note: $p < 0.05$ = significant.

CONCLUSION

The study concluded that predictors of impaired HRQoL differ in patients with compensated and decompensated cirrhosis. The study was performed by Bondini S (2007), to compare HRQoL between patients with CH-C, CH-C, primary biliary cirrhosis (PBC) and healthy controls. In this study total 3 HRQoL questionnaire, (CLDQ, SF-36, HUI, Health Utility Index) used and scores were compared using analysis of variance and multiple regression. The study results are obtained as CH-C and PBC patients scores lowest on all CLDQ, SF-36 and HUI domains compared with CH-B patients and healthy controls. Comparing

with our study we also found same results as CH-C and PBC patients scored lowest on CLDQ. The study concluded that CH-B patients have better HRQoL than CH-C, PBC and population norms. CH-B patients overall utility scores are lower than population norms.

ABBREVIATIONS

CLD: Chronic Liver Disease; **NCBI:** National Center for Biotechnology Information; **QoL:** Quality of Life; **HRQoL:** Health-Related Quality of Life; **CLDQ:** Chronic Liver Disease Questionnaire; **PI:** Principal Investigator; **AS:** Abdominal Symptoms; **FA:** Fatigue; **SS:** Systemic Symptoms; **AC:** Activity; **EF:** Emotional Function; **WO:** Worry; **HRQL:** Health-Related Quality of Life; **M:** Mean; **NAFLD**: Non-Alcoholic Fatty Liver Disease; **ANOVA:** Analysis of Variance; **CH-B:** Chronic Hepatitis B; **CH-C:** Chronic Hepatitis C; **PBC:** Primary Biliary Cirrhosis; **SF-36:** Short Form-36 Health Survey; **HUI:** Health Utility Index.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Bondini, S., Kallman, J., Dan, A., Younoszai, Z., Ramsey, L., Nader, F., & Younossi, Z. M. (2007). Health-related quality of life in patients with chronic hepatitis B. Liver International, 27(8), 1119–1125.

Dan, A. A., Kallman, J. B., Wheeler, A., Younoszai, Z., Collantes, R., Bondini, S., Gerber, L., & Younossi, Z. M. (2007). Health-related quality of life in patients with non-alcoholic fatty liver disease. Alimentary Pharmacology & Therapeutics, 26(6), 815–820.

Dienstag, J. L. (2018). Chronic hepatitis. In Harrison's principles of internal medicine (20th ed., pp. 2375–2396). McGraw-Hill.

Gutteling, J. J., De Man, R. A., Busschbach, J. J., & Darlington, A. S. (2007). Overview of research on health-related quality of life in patients with chronic liver disease. Netherlands Journal of Medicine, 65(7), 227–234.

Gutteling, J. J., De Man, R. A., Van Der Plas, S. M., Schalm, S. W., Busschbach, J. J., & Darlington, A. S. (2006). Determinants of quality of life in chronic liver patients. Alimentary Pharmacology & Therapeutics, 23(11), 1629–1635.

Gutteling, J. J., Duivenvoorden, H. J., Busschbach, J. J., Robert, A., & Darlington, A. S. (2010). Psychological determinants of health-related quality of life in patients with chronic liver disease. Psychosomatics, 51(2), 157–165.

Häuser, W., Holtmann, G., & Grandt, D. (2004). Determinants of health-related quality of life in patients with chronic liver diseases. Clinical Gastroenterology and Hepatology, 2, 157–163.

Labenz, C., Toenges, G., Schattenberg, J. M., Nagel, M., Huber, Y., Marquardt, J. U., Galle, P. R., & Wörns, M. A. (2019). Health-related quality of life in patients with compensated and decompensated liver cirrhosis. European Journal of Internal Medicine, 70, 54–59.

National Center for Biotechnology Information. (2020). Chronic liver disease. StatPearls.https://www.ncbi.nlm.nih.gov/books/NBK554597/

Schulz, K. H., Kroencke, S., Ewers, H., Schulz, H., & Younossi, Z. M. (2008). The factorial structure of the chronic liver disease questionnaire (CLDQ). Quality of Life Research, 17(4), 575–584.

Sobhonslidsuk, A., Silpakit, C., Kongsakon, R., Satitpornkul, P., Sripetch, C., & Khanthavit, A. (2006). Factors influencing health-related quality of life in chronic liver disease. World Journal of Gastroenterology, 12(48), 7786.

Souza, N. P., Villar, L. M., Garbin, A. J., Rovida, T. A., & Garbin, C. A. (2015). Assessment of health-related quality of life and related factors in patients with chronic liver disease. Brazilian Journal of Infectious Diseases, 19(6), 590–595.

Wilson, I. B., & Cleary, P. D. (1995). Linking clinical variables with health-related quality of life: A conceptual model of patient outcomes. JAMA, 273, 59–65.

Younossi, Z., Kallman, J., & Kincaid, J. (2007). The effects of HCV infection and management on health-related quality of life. Hepatology, 45, 806–816.

Younossi, Z. M., Guyatt, G., Kiwi, M., Boparai, N., & King, D. (1999). Development of a disease specific questionnaire to measure health related quality of life in patients with chronic liver disease. Gut, 45(2), 295–300.

Cite this article: Hadia R, Parmar K, Rane J, Saijwani N, Reddy P, Rajput HS, *et al.* A Cross-Sectional Study on the Assessment of Health-Related Quality of Life in Patients with Chronic Liver Disease at Tertiary Care Teaching Hospital. J Young Pharm. 2026;18(2):563-8.