



A STUDY TO ASSESS THE HEALTH RELATED QUALITY OF LIFE AMONG PATIENTS DIAGNOSED WITH CHRONIC LIVER DISEASE IN A SELECTED HOSPITAL, CALICUT

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**A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN NURSING**

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ABSTRACT

Chronic Liver Disease (CLD) is a progressive condition that significantly affects the physical, psychological, and social well-being of patients. Assessing health-related quality of life (HRQOL) among patients with CLD is essential to understand the overall impact of the disease and to plan comprehensive nursing and medical care. The present study aimed to assess the health-related quality of life among patients diagnosed with Chronic Liver Disease and to determine its association with selected demographic and clinical variables. A quantitative research approach with a non-experimental descriptive research design was adopted for the study. The sample consisted of 90 patients diagnosed with chronic liver disease who attended the inpatient and outpatient departments of Aster MIMS Hospital, Calicut. Data were collected using two tools: Tool 1: A structured questionnaire assessing demographic and clinical variables. Tool 2: A standardized Chronic Liver Disease Questionnaire (CLDQ) developed by Z. M. Younossi to assess health-related quality of life. Content validity of Tool 1 was established using the Item Content Validity Index (I-

CVI). The CLDQ demonstrated good structural and construct validity. Reliability was assessed using the test–retest method, and the tools were found to be reliable. A pilot study was conducted among 10 patients on 23/06/2025, confirming feasibility. The main study was conducted from 25/06/2025 to 05/07/2025. Data were analyzed using descriptive and inferential statistics. The findings revealed that among the 90 subjects, 52.2% had good health-related quality of life, 13.5% had fair health-related quality of life, and 15.3% had excellent health-related quality of life. None of the subjects had poor health-related quality of life. A statistically significant association was found between health-related quality of life and monthly income. Significant associations were also observed between health-related quality of life and selected clinical variables such as blood in stool, dietary pattern, regular medical check-ups, nausea, and vomiting. The findings indicate that most patients with chronic liver disease had good health-related quality of life. Socioeconomic status and certain clinical symptoms significantly influenced quality of life. These results highlight the importance of regular follow-up, symptom management, and lifestyle modification to improve overall well-being in patients with chronic liver disease.

Key words: Chronic Liver Disease, health related quality of life, patients.

CHAPTER 1

INTRODUCTION

The liver is the largest internal organ and gland in the human body, weighing approximately 1.2–1.5 kg in adults and located in the right upper quadrant of the abdomen beneath the diaphragm. It performs more than 500 vital biochemical functions that are essential for maintaining homeostasis, making it one of the most functionally diverse organs in the body (Guy-ton & Hall, 2021).¹Chronic liver disease is the 11th leading cause of death and 15th leading cause of morbidity accounting for about 2.2% of death, 1.5% of disability adjusted life years worldwide in 2016. more recent data report that chronic liver diseases caused approximately 1.43 million deaths globally in 2021.²Chronic liver disease (CLD) refers to a wide range of progressive liver conditions that cause long-term damage to the liver, often leading to scarring (fibrosis), cirrhosis, and impaired liver function. The major types include alcoholic liver disease, caused by excessive alcohol consumption; non-alcoholic fatty liver disease (NAFLD), often linked to obesity, diabetes, and metabolic syndrome; and viral hepatitis (Hepatitis B and C), which can cause ongoing liver inflammation and injury. Other less common causes include autoimmune hepatitis, where the body's immune system attacks liver cells; cholestatic diseases such as primary biliary cholangitis and primary sclerosing cholangitis, which damage bile ducts; and genetic/metabolic disorders like Wilson's disease or hemochromatosis that result in abnormal accumulation of metals or other substances in the liver. Over time, all these conditions can progress silently, eventually leading to cirrhosis, portal hypertension, liver failure, or hepatocellular carcinoma if left untreated. Chronic liver disease develops due to a variety of factors that cause long-term injury to the liver.³

The percentage of patients encountered with cirrhosis in India is 39.5% males and 19.6% female. In worldwide in male as the age standardised prevalence of compensated cirrhosis increased by 2.9% from 1990 to 2017. The absolute number of chronic liver disease cases is estimated at 1.5 billion worldwide in a recent systematic review.⁴The 42% of patients with cirrhosis worldwide had hepatitis B viral infection and 21% had hepatitis C viral infection. A population-based investigation in Thiruvananthapuram reported that nearly 50% of adults over 25 years have non-alcoholic fatty liver disease, a key precursor of fibrosis and cirrhosis, although only about 20–30% show progression toward advanced liver damage.⁵

Clinical features of chronic liver disease vary depending on the stage of the illness but usually develop gradually. In the early stages, patients may remain asymptomatic or present with nonspecific symptoms such as fatigue, loss of appetite, nausea, and weight loss. As the disease progresses, features of liver dysfunction and portal hypertension become more evident. Common signs include jaundice, ascites, peripheral oedema, and easy bruising or bleeding due to impaired clotting. Patients may also develop spider angiomas, palmar erythema, muscle wasting, and pruritus. In males, gynecomastia and testicular atrophy may occur due to hormonal imbalance, while females may experience menstrual irregularities. Advanced disease often leads to hepatic encephalopathy as toxins build up in the blood. Chronic liver disease can lead to a wide range of serious complications as progressive fibrosis and cirrhosis impair normal liver function. One major complication is portal hypertension, which results in the development of oesophageal and gastric varices, splenomegaly, and ascites. Ascites may become complicated by spontaneous bacterial peritonitis, a

potentially life-threatening infection. Hepatic encephalopathy is another important complication, characterised by confusion, altered behaviour, or coma due to the accumulation of toxins in the bloodstream. Patients are also at increased risk of coagulopathy and bleeding tendencies because of impaired synthesis of clotting factors. In the long term, CLD significantly raises the risk of hepatocellular carcinoma (HCC). Other systemic complications include hepatorenal syndrome and hepatopulmonary syndrome. Collectively, these complications contribute to high morbidity and mortality in patients with advanced chronic liver disease⁶.

The management of chronic liver disease is multifaceted and aims to halt disease progression, prevent complications, and improve quality of life. The cornerstone of treatment is aetiology-specific therapy, such as antiviral agents for chronic hepatitis B and C, lifestyle modification and insulin-sensitising strategies for non-alcoholic fatty liver disease, and complete alcohol abstinence with nutritional support for alcoholic liver disease⁷. General measures include vaccination against hepatitis A and B, avoidance of hepatotoxic drugs, and management of metabolic risk factors such as obesity, diabetes, and dyslipidemia. In patients with established cirrhosis, regular surveillance for complications such as screening for esophageal varices, ascites, hepatic encephalopathy, and hepatocellular carcinoma—is essential. Pharmacological interventions like non-selective beta blockers for variceal bleeding prophylaxis, diuretics for ascites, and lactulose or rifaximin for encephalopathy are commonly employed. Nutritional optimization, physical activity, and psychosocial support, including counselling and palliative care, play a critical role in maintaining health-related quality of life. For patients with advanced decompensation or liver failure, liver transplantation remains the definitive treatment and offers the best long-term survival. Early diagnosis, patient education, and coordinated multidisciplinary care are therefore pivotal in reducing morbidity and mortality in CLD⁸.

The quality of life in patients with chronic liver disease is influenced by a combination of physical, psychological, and social factors. Physically, symptoms such as fatigue, weakness, itching, abdominal discomfort, and complications like ascites or hepatic encephalopathy can limit daily activities and independence. Nutritional problems and frequent hospital visits also add to the burden. Psychologically, patients often experience anxiety, depression, fear of disease progression, and social isolation, which reduce emotional well-being. Social and economic factors play a major role as well—loss of employment due to illness, financial strain from long-term treatment, and reduced participation in social and family life contribute to a lower quality of life. Additionally, the presence of stigma related to visible symptoms like jaundice or misunderstanding about liver disease can further affect self-esteem and social interactions. Overall, both the disease itself and its complications, along with the emotional and social challenges, significantly impact the quality of life of CLD patients⁹.

NEED AND SIGNIFICANCE OF THE STUDY

Patients who are affected with chronic liver disease are frequently encounter deterioration in family relationships, stress and social isolation. During clinical posting, investigators had seen so many patients with chronic liver disease and had opportunity to deal with them. The chronic liver disease patients may require continuing care for many years. The quality of life in CLD patients is assessed using structured questionnaires and scales that capture the physical, emotional, and social impact of the disease. These tools evaluate symptoms, treatment side effects, psychological wellbeing, daily functioning, and social relationships. Assessing quality of life in CLD patients requires a holistic approach that combines clinical data with validated questionnaires like CLDQ or SF-36. This allows healthcare professionals to identify not only medical needs but also psychosocial and functional challenges, guiding patient-centred management¹⁰.

A study was conducted to assess health related quality of life among Liver disorder patients in Northern India. Self-employed or self-salaried patients too had a better quality of life as compared to labourers and unemployed. People residing rural or urban areas had a better quality of life as compared to those residing in slums. Findings indicated that health related quality of life is impaired among patients suffering from liver disorder specifically those admitted in the intensive care unit¹¹.

A study was conducted to assess health related quality of life in patients with advanced chronic liver disease. The available evidence suggests that health related quality of life is more significantly impaired in patients with cirrhosis than in both healthy controls and in patients with non-cirrhotic chronic liver disease. In this study was identified that liver impairment increases with increasing severity of cirrhosis and also identified some clinical factors, which contribute to impaired health related quality of life include the presence of ascites, hepatic encephalopathy or hyponatremia¹².

STATEMENT OF THE PROBLEM

A study to assess the health-related quality of life among patients diagnosed with chronic liver disease in a selected hospital, Calicut.

RESEARCH QUESTION

What is the impact of chronic liver disease on quality of life among patients?

AIM OF THE STUDY

The aim of the study to assess the health related quality of life among patients diagnosed with chronic liver disease.

OBJECTIVES

1. To assess the health-related quality of life among patients with Chronic Liver Disease.
2. To find out the association between the health related quality of life among Chronic Liver Disease patients with selected demographic variables and clinical variables.

OPERATIONAL DEFINITION

1. Health related quality of life: The health related quality of life is a broad concept which reflects the perception of patients on how the effects of disease and treatment impact on their mental well-being, physical health, functional status, social relationships and personal beliefs which was rated by them on the Chronic Liver Disease Questionnaire (CLDQ) and graded as excellent, good, fair, poor.

2. Chronic liver disease: It is a progressive liver damage that lasts more than 6 months impairing the liver function

ASSUMPTION

1. Quality of life may vary from individual to individual.
2. Health related quality of life may vary based on the stage and severity of chronic liver disease.

HYPOTHESIS

H0: There will be no significant association between health-related quality of life among patients with chronic liver disease and selected sociodemographic and clinical variables at 0.05 level of significance

H1: There will be significant association between health-related quality of life among patients with chronic liver disease and the selected sociodemographic variable at 0.05 level of significance.

H2: There will be significant association between health-related quality of life among patients with chronic liver disease and the selected clinical variable at 0.05 level of significance.

CONCEPTUAL/THEORETICAL FRAMEWORK OF THE STUDY

The conceptual or theoretical framework illustrates the interrelationship between biological, physiological, and demographic variables and their influence on the overall quality of life. It emphasises that individual characteristics such as age, sex, gender, education, marital status, occupation, income, and place of living serve as foundational factors that determine health outcomes. These factors influence the symptom status, which includes physical and psychological manifestations such as abdominal bloating, fatigue, sleepiness, body pain, shortness of breath, dry mouth, decreased appetite, and muscle cramps. The presence and severity

of these symptoms further affect the individual’s functional status, encompassing social, emotional, and physical functioning. Functional limitations and emotional distress then shape the individual’s general health perception, reflecting how one views their own health condition. Ultimately, these elements collectively determine the overall quality of life. Additionally, the framework acknowledges the role of environmental characteristics, particularly social support from family and friends, which can positively influence symptom management, functional capacity, and well-being. Thus, the model demonstrates how both personal and environmental factors interact through a sequence of health-related dimensions to affect the overall quality of life.

CONCEPTUAL/THEORETICAL FRAMEWORK OF THE STUDY

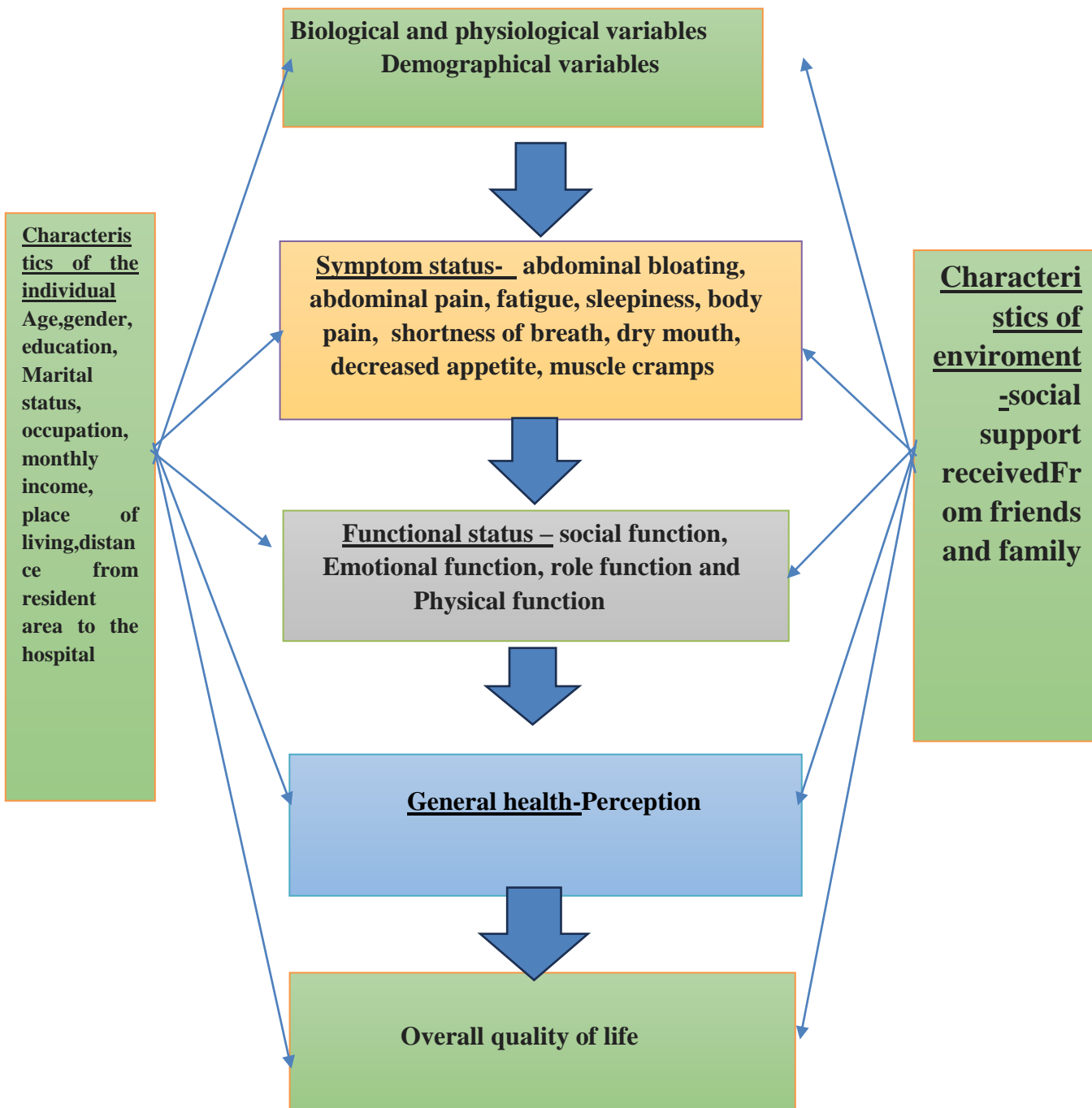


Figure1.1: conceptual/theoretical framework of the Research design

REVIEW OF LITERATURE

Review of literature is an important step in the development of research project. A literature review provides researcher with a background for understanding current knowledge on a topic and eliminate and significant of the new study. Here were viewed many studies conducted similar to the present study and articles published in various journals⁶.

The literature review was described under the following headings.

- Literature related to prevalence of CLD
- Literature related to Factors determining health related quality of life among patients with Chronic Liver Disease
- Literature related to impact of CLD on health and daily living.
- Literature related to quality of life of patients with CLD

Section A: Literature related to prevalence of CLD

The study conducted by Andrew Moon and Amit Singal, et al to find the epidemiology of the Chronic Liver Disease worldwide which revealed that epidemiology of Chronic Liver Disease is shifting. Chronic liver disease (CLD) and cirrhosis account for 2 million deaths worldwide each year. Globally, 1.5 billion persons had CLD in 2017, most commonly due to non alcoholic fatty liver disease (60%), Hepatitis B infection (29%), Hepatitis C infection (9%), and Alcoholic Liver Disease (2%). There have been small increase in cirrhosis incidence in Europe, high income Asia-Pacific, East Asia, Southeast Asia, and South Asia from 2000-2015. The major complications of CLD including cirrhosis which account for 1.2 million deaths and liver cancer which accounts for 790,000 deaths – account for 3.5% of all deaths worldwide. Approximately 71 million people worldwide have chronic HCV with a prevalence of 1.0% in the US, 1.5-1.8% in Europe, 1.0% in Africa, and 0.5-0.7% in Asia. Most HCV infections are caused by genotypes 1 and 3, which are estimated to account for 44% and 25% of infections, respectively. There are an estimated 1.8 million new HCV infections per year with an incidence rate of 23.7 infected persons per 100,000 persons with the highest rates in the Eastern Mediterranean 62.5 infected persons per 100,000 persons. In 2015, 257 million people had chronic HBV infection. Western Pacific nations (6.2%) and Africa (6.1%) had the highest prevalence of HBV and accounted for more than two-thirds of all cases. NAFLD encompasses a spectrum including hepatic steatosis, non-alcoholic steatohepatitis (NASH), and cirrhosis. The global prevalence of NAFLD is estimated at approximately 24% with considerable variability from Africa (13.5%) to South America (30.5%), the Middle East (31.8%), and Asia (33.9%). ALD encompasses alcoholic hepatitis, steatosis, steatohepatitis and fibrosis/cirrhosis, but alcohol misuse is responsible for an estimated 27% of deaths from liver disease and 30% of liver cancer deaths worldwide¹³.

A cross-sectional study about Contemporary Epidemiology of Chronic Liver Disease and Cirrhosis conducted by Andrew M Moon et al. explains accurate estimates for the contemporary burden of chronic liver disease (CLD) are vital for setting clinical, research, and policy priorities. They aimed to review the incidence, prevalence, and mortality of CLD and its resulting complications, including cirrhosis and hepatocellular carcinoma (HCC) they reviewed the published literature on the incidence, prevalence, trends of various etiologies of CLD and its resulting complications. In addition, they provided updated data from the Centers for Disease Control and Global Burden of Disease Study on the morbidity and mortality of CLD, cirrhosis, and hepatocellular carcinoma (HCC). Lastly, we assessed the strengths and weaknesses of available sources of data in hopes of providing important context to these national estimates of cirrhosis burden. The result shows an estimated 1.5 billion persons have CLD worldwide and the age-standardised incidence of CLD and cirrhosis is 20.7/100,000, a 13% increase since 2000. Similarly, cirrhosis prevalence and mortality has increased in recent years in the United States. The epidemiology of CLD is shifting, reflecting implementation of large-scale hepatitis B vaccination and hepatitis C treatment programs, the increasing prevalence of the metabolic syndrome, and increasing alcohol misuse the global burden of

CLD and cirrhosis is substantial. Although vaccination, screening, and antiviral treatment campaigns for hepatitis B and C have reduced the CLD burden in some parts of the world, concomitant increases in injection drug use, alcohol misuse, and metabolic syndrome threaten these trends. Ongoing efforts to address CLD-related morbidity and mortality require accurate contemporary estimates of epidemiology and outcomes¹⁴.

A study was conducted by Carmela Loguercio, Angelo Tiso, et al to assess the management of chronic liver diseases by general practitioners in a large area of Southern Italy. 6550 patients with chronic liver disease were included. This was a 5-year retrospective analysis from 104 physicians in charge of a population of 143,159 adult subjects. The result shows that, 1330 (20.3%) had HCV infection, 226 (3.4%) HBV infection, and 293 (4.5%) liver cirrhosis (25 alcohol-related). The prevalence of alcohol consumption, recorded by 90% of physicians, was 20.4%. Hypertransaminasemia and liver steatosis had a prevalence of 6.7% and 2.4%, respectively. Although transaminases were checked 3 times over 5 years in 80% of, few patients were investigated for viral infection, and less than 50% underwent ultrasonography and consultation, leaving undefined a consistent number of cases¹⁵.

A hospital-based cross-sectional study was conducted by Yatendra Singh, Dilwer Nagar, et al on 100 chronic liver disease patients at the OPD/IPD department of medicine in Dr. Sushila Tiwari Hospital, Haldwani, Uttarakhand, from January 2020 to September 2021, to find the association between electrolyte imbalance and its effect on chronic liver disease. The result shows that hyponatremia was observed in 49% of the patients, hypokalaemia in 30%, and hypocalcemia in 16% of the patients. The electrolyte levels were similar irrespective of the disease severity and presence of complications. The sodium and potassium levels had a significant association with the outcomes. This study concluded that hyponatremia was the commonest electrolyte disturbance seen in the patients with chronic liver disease. No significant association was observed between the electrolyte and severity of the disease and complications¹⁶.

A population-based study was conducted by Sumeet K Asrani, Lauren Hall, et al about the trends in Chronic Liver Disease-Related Hospitalisations. In this study they examined all CLD-related inpatient encounters (2000-2015) in Dallas-Fort worth (DFW). Result shows there were 83,539 CLD-related hospitalisations in 48,580 unique patients across 84 hospitals. The age and gender standardised annual rate of CLD-related hospitalisation increased from 48.9 per 100,000 in 2000 to 125.7 per 100,000 in 2014. Mean age at hospitalisation increased from 54.0 (14.1) to 58.5 (13.5) years; the proportion of CLD patients above 65 years increased from 24.2% to 33.1%. HCV-related hospitalisations plateaued, whereas an increase was seen in hospitalisations related to alcohol (9.1 to 22.7 per 100,000) or fatty liver (1.4 per 100,000 to 19.5 per 100,000). The prevalence of medical co-morbidities increased for CLD patients: coronary artery disease (4.8% to 14.3%), obesity (2.8% to 14.6%), chronic kidney disease (2.8% to 18.2%), and diabetes (18.0% to 33.2%). Overall hospitalisations with traditional complications of portal hypertension (ascites, varices, and peritonitis) remained stable over time. However, hospitalisation with complications related to infection increased from 54.7% to 66.4%, and renal failure increased by sevenfold (2.7% to 19.5%). Study concluded that CLD-related hospitalisations have increased twofold over the last decade¹⁷.

A quantitative cross-sectional study was conducted by Bushra Majid, Rimsha Khan, Zainab Junaid, et al among 368 patients admitted in Civil Hospital Karachi to assessment of Knowledge about the risk factors of Chronic Liver Disease. A scoring scale was developed to assess the level of knowledge and result found that only 32% of our study population had good knowledge about the risk factors of CLD while majority of them (68%) had poor knowledge. Regarding individual risk factors, >60% patients were aware that obesity, high fat intake, prolonged use of drugs, use of alcohol and hepatitis B and C are risk factors of CLD, while most of them did not know diabetes to be a risk factor as well. 51.4% patients thought that hepatitis B and C could not be transmitted via sexual contact and from mother to her baby. There was a positive association between education level and awareness about the risk factors of CLD ($p = 0.006$). The study concluded that the lack of knowledge about this disease is the main cause of its rapid increment and the reason why it is so prevalent in the world. More studies and nationwide awareness programs are needed to control its spread¹⁸.

Section B:Literature related to Factors determining health related quality of life among patients withChronic Liver Disease

A cross-sectional study was carried out by AbhasneeSobhonslidsuk, Chatchawan Silpakit, et al. to investigate the factors contributing to health-related quality of life (HRQL) in chronic liver disease (CLD). Two fifty subjects with CLD and 50 normal subjects in the age group (15-18years) were enrolled into the study. The study was conducted in Gastroenterological Clinic between 1st January 2004 and 30th June 2004. The result of the study showed that there were only 16 (6.4%) patients with Child's class C cirrhosis, and viral hepatitis was the most common cause of CLD (58.8%), followed by chronic alcoholic (17.2%) and non-alcoholic fatty liver disease (10.8%).Advanced stages of chronic liver disease, old age, female sex, low socio-economic status and financial burden are important factors reducing health related quality of life. Good health perception improves health related quality of life regardless of stages of liver disease¹⁹.

A study conducted by James Frith and Julia L Newton on the topic autonomic dysfunction in chronic liver disease and quality of life in UK. The result of the study showed that quality of life (QOL) is impaired in those with chronic liver disease (CLD). One of the most important contributors to impaired QOL is the symptomatic burden which can range from slight to debilitating. Autonomic dysfunction accounts for a significant proportion of these symptoms, which can be common, non-specific and challenging to treat.Evidence-based treatment options for autonomic symptoms, specifically in CLD, can be lacking and must be extrapolated from other studies and expert opinion. For those with severely impaired quality of life, liver transplantation may offer an improvement. Simple measures such as reviewing medications (beta-blockers, diuretics, and antidepressants) may lead to improvements in the patients symptoms and quality of life²⁰

A cross-sectional study was conducted by Grishma Hirode, SammySaab, Robert j Wong investigates one factor associated with the rapidly increasing clinical and economic burden of chronic liver disease (CLD) is inpatient health care utilisation to understand trends in the hospitalisation burden of CLD in the US. This cross-sectional study of hospitalised adults in the US used data from the National Inpatient Sample from 2012 to 2016 on adult CLD-related hospitalisations. Data were analysed from June to October 2019.Main outcomes and measures includes Hospitalisations identified using a comprehensive review of CLD-specific International Classification of Diseases, Ninth Revision, Clinical Modification and International Statistical Classification of Diseases, Tenth Revision, Clinical Modification codes. Survey-weighted annual trends in national estimates of CLD-related hospitalisations, in-hospital mortality, and hospitalisation costs, stratified by demographic and clinical characteristics.This study included 1 016 743 CLD-related hospitalisations (mean [SD] patient age, 57.4 [14.4] years; 582 197 [57.3%] male; 633 082 [62.3%] white). From 2012 to 2016, the rate of CLD-related hospitalisations per 100 000 hospitalisations increased from 3056 (95% CI, 3042-3069) to 3757 (95% CI, 3742-3772), and total inpatient hospitalisation costs increased from \$14.9 billion (95% CI, \$13.9 billion to \$15.9 billion) to \$18.8 billion (95% CI, \$17.6 billion to \$20.0 billion). Mean (SD) patient age increased (56.8 [14.2] years in 2012 to 57.8 [14.6] years in 2016) and, subsequently, the proportion with Medicare also increased (41.7% [95% CI, 41.1%-42.2%] to 43.6% [95% CI, 43.1%-44.1%]) (P for trend < .001 for both). The proportion of hospitalisations of patients with hepatitis C virus was similar throughout the period of study (31.6% [95% CI, 31.3%-31.9%]), and the proportion with alcoholic cirrhosis and non-alcoholic fatty liver disease showed increases. The mortality rate was higher among hospitalisations with alcoholic cirrhosis (11.9% [95% CI, 11.7%-12.0%]) compared with other aetiologies. Presence of hepatocellular carcinoma was also associated with a high mortality rate (9.8% [95% CI, 9.5%-10.1%]). Cost burden increased across all etiologies, with a higher total cost burden among hospitalisations with alcoholic cirrhosis (\$22.7 billion [95% CI, \$22.1 billion to \$23.2 billion]) or hepatitis C virus (\$22.6 billion [95% CI, \$22.1 billion to \$23.2 billion]). Presence of cirrhosis, complications of cirrhosis, and comorbidities added to the CLD burden. Over the study period, the total estimated national hospitalisation costs in patients with CLD reached \$81.1 billion. The inpatient CLD burden in the US is likely increasing because of an aging CLD population with increases in concomitant comorbid conditions²¹

A survey study design was conducted by Nadja Ostberg, Birgitte Gade Jacobsen, Mette Munk Lauridsen, and Lea Ladegaard Gronkaerand, to assess anxiety, depression, hopelessness, quality of life, and the

perception of stigmatisation in a large cohort of patients with chronic liver disease. A total of 340 patients completed the survey. Mental health was assessed using the Beck Anxiety Inventory, the Beck Hopelessness Scale, and the Major Depression Inventory. Quality of life was measured with the Chronic Liver Disease Questionnaire and the European Quality-of-Life visual analogue scale. The result revealed that 15% of the patients had moderate or severe anxiety, 3% had moderate or pronounced hopelessness, and 8% had moderate or severe depression. The prevalence of all three was highest in patients with cirrhosis and was associated with a low quality of life. More patients with cirrhosis had perceived stigmatisation compared to patients with liver disease without cirrhosis, which affected their self-perception. The results emphasise the need for increased focus on mental health problems and awareness on preventing the discrimination of patients with liver disease²².

A cross sectional study was by IJ Hickman, JR Jonsson to investigate the long term effect of weight loss on liver biochemistry, serum insulin levels, and quality of life in overweight patients with chronic liver disease and the effect of subsequent weight maintenance or regain. In this study 31 patients completed a 15 month diet and exercise intervention are taken as study sample. On completion of the intervention, patients (68%) had achieved and maintained weight loss with a mean reduction of 9.4 (4%) body weight. Improvements in serum alanine amino-transferase (ALT) levels were correlated with the amount of weight loss ($r = 0.35$, $p = 0.04$). In patients who maintained weight loss, mean ALT levels at 15 months remained significantly lower than values at enrolment ($p = 0.004$), while in regainers ($n = 10$), mean ALT levels at 15 months were no different to values at enrolment ($p = 0.79$). Improvements in fasting serum insulin levels were also correlated with weight loss ($r = 0.46$, $p = 0.04$), and subsequent weight maintenance sustained this improvement. Quality of life was significantly improved after weight loss. Weight maintainers sustained recommended levels of physical activity and had higher fasting insulin levels ($p = 0.03$) at enrolment than weight regainers. The study findings demonstrated that maintenance of weight loss and exercise in overweight patients with liver disease results in a sustained improvement in liver enzymes, serum insulin levels, and quality of life. Treatment of overweight patients should form an important component of the management of those with chronic liver disease²⁸²³.

A cross-sectional study was conducted by Ravi R Pradhan, Brindeswari Kafle Bhandari, Rahul Pathak, Sagar Poudyalto investigate the factors affecting health related quality of life (HRQOL) in Nepalese patients with chronic liver disease (CLD). A total of 60 CLD patients were included in the study. In this study, HRQOL was measured with validated Nepali versions of the short-form 36 (SF-36) survey. Socioeconomic factors, aetiology, laboratory parameters, disease severity, and self rated health perceptions on HRQOL were recorded for analysis. Result shows Sixty CLD patients were enrolled in the study. The following HRQOL scores were obtained: physical functioning (PF) (34.4 ± 26.7), role limitation due to physical health (RLPH) (7.5 ± 17.8), role limitation due to emotional problems (RLEP) (27.7 ± 38.2), energy or fatigue (E/F) (38.5 ± 21.5), emotional well-being (EWB) (57.7 ± 22.8), social functioning (SF) (55.2 ± 23.5), pain (44.8 ± 30.3), and general health (GH) (38.2 ± 17). Employed status and higher annual family income had a positive impact on HRQOL. Ascites and abnormal upper gastrointestinal endoscopic findings were associated with poor health status perceptions. More severe disease (higher Child-Pugh class) was associated with lower HRQOL scores. A significant negative correlation between the model for end-stage liver disease (MELD) score and HRQOL domains was observed ($p < 0.05$). Age, gender, religion, education, and duration of the diagnosis of CLD had no effect on HRQOL of CLD patients²⁴.

Section C: Literature related to impact of CLD on health and daily living

A cross sectional study was conducted by Anil Kardashian, Marina Serper about health disparities and chronic liver disease. The study reviewed the existing literature on racial and ethnic, gender and socioeconomic disparities in chronic liver disease using a social determinants of health framework to better understand the social and structural factors cause health disparities and affect chronic liver disease outcomes. The syndemic of hazardous alcohol consumption, opioid use, and obesity has led to important changes in liver disease epidemiology that have exacerbated health disparities. There have been large increases in alcohol use disorder in women, racial and ethnic minorities, and those experiencing poverty in the context of poor access to alcohol treatment, leading to increasing rates of alcohol associated liver diseases. Rising rates of NAFLD and associated fibrosis have been observed in Hispanic persons, women aged <50, and individuals experiencing food insecurity. Access to viral hepatitis screening and linkage to treatment are suboptimal for racial and ethnic minorities and individuals who are uninsured or

underinsured, resulting in greater liver related mortality and later stage diagnoses of HCC. In this study they also propose potential solutions to eliminate disparities, outlining health policy, health system, community, and individual solutions to promote equity and improve health outcomes²⁵.

In an experimental study conducted by Carolin V. Schneider, Inuk Zandvakili, et al on 96,688 participants to clarify the association between accelerometer-measured physical activity and chronic liver disease. The study was conducted in UK from 2006 to 2010. The result revealed that Physical activity is associated with a dose-dependent reduction in liver disease that appears to be independent of adiposity, an increase of 2,500 steps per day was associated with a 38% reduction in liver disease and a 47% reduction in Non-Alcoholic Fatty Liver Disease, in patients with liver disease, activity was associated with a reduction in liver disease progression and cirrhosis development and in patients with liver disease, increased physical activity significantly reduced the risk of liver-related death. The study concluded that greater physical activity is associated with a dose-dependent reduction in liver disease, which appears to be independent of adiposity²⁶.

A study conducted by Evangelista Sagnelli, Tommaso Strofolini, et al. to assess the Gender differences in chronic liver diseases. The study evaluated in 12,263 patients with CLD enrolled in two national surveys (9997 in 2001 and 2557 in 2014) in Italy. The overall male to female ratio (M/F) was 1.4 (7138/5124). Compared with females, males were significantly more likely to be younger (52.9 vs. 58.7 yrs.), with HBV infection alone (13.2% vs. 9.2%) and with alcoholic liver disease alone (11.4% vs. 6.9%), but less likely to show HCV infection alone (48.0% vs. 67.9%). A male preponderance was observed in HBV-related cases (1.99) and in alcoholic-related cases (2.3), a preponderance observed both in the 2001 and in 2014 cases. In HCV related cases, however, females predominated in 2001 (M/F 0.9) and males in 2014 (M/F 1.5). The rate of cirrhosis in alcohol-related etiology was close to 36% in both gender, a finding much higher than that observed for both sexes in HBV and HCV aetiologies. Both males and females enrolled in 2014 were older and higher with rate of cirrhosis and or HCC (<0.0001) and those investigation in 2001. There was a remarkable increase in time over a proportion of male abstainers (36.7% in 2001 and 64.3 in 2014). This study highlights important inter- and intra-gender differences in the characteristics and etiological factors of patients with CLD in Italy²⁷.

A descriptive cross-sectional study was conducted by Zahraa Hassan Abdul Baki and Dr. Jawadkadum to assess the association of the severity of hepatic tissue damage and the serum electrolytes profiles in cirrhotic patients. The study was conducted in Al-Kadhimiya teaching hospital and a total 20 individuals had been included in the study sample. The result shows that most prevalent serum electrolytes abnormality was hyponatremia (<136mmol/l) that found in 85% of cases, with a correlation between hyponatremia and low serum albumin in 70% of cases, and between hyponatremia and high total serum bilirubin in 80% of cases. There was a normal value of serum potassium in 65% of patients, and hypokalaemia (<3.5mmol/l) in 20% of cases, with no correlation between serum potassium and liver function. They found normal chloride value in 70% of cases. This study concluded that Cirrhotic patients are predisposed to different electrolytes disorders. Hyponatremia is a common finding in this study (85%) with normal value serum potassium found in (65%) and normal value of serum chloride found in (70%) 23²⁸.

A study conducted to assess the etiology and clinical profile of Chronic Liver Disease in India by Partha Mukhrjee, Sreenivas Vishnubhatla, et al. From eleven hospitals a total sample of 13014 patients from different parts of India participated in the study. The study was conducted from February 2010 to January 2013, the results of the study shows that of these, 13014 patients the median age of presentation with CLD was 43 years. Regional variation in age of presentation was noted. Regions with predominant viral etiologies for liver disease (northern, eastern and southern regions) had relatively lower median age at diagnosis (40, 42 and 43 years, respectively). Whereas, regions with Non Alcoholic Fatty Liver Disease (NAFLD) as predominant etiology (western and central region) show higher median age at diagnosis (46 and 47 years, respectively) Overall, 33.9% (4413 out of 13027) of the patients had cirrhosis. Proportion of cirrhosis was significantly higher in eastern (1565 out of 3386, 46.2%) and north-eastern region (258 out of 510, 51.2%) HBV was the commonest cause of CLD. There was significant regional variation in etiology across the country. HCV was the commonest cause in the northern region (1951 out of 4343 patients, 44.9%). HBV was predominant in the east and south (1621 out of 3386, 47.9% and 750 out of 1855, 40.6% in eastern and southern regions, respectively) and HBV was also the second most frequent etiology in rest of the country. Alcohol was the most common etiology in the north-eastern regions of the country (161 out of 510, 31.6%), closely followed by HBV and HCV. NAFLD was in western and

central regions of the country (719 out of 1822, 39.5% and 484 out of 1111, 43.6%, respectively). Alcoholism (34.3% of 4413) was the commonest cause of cirrhosis while Hepatitis B (33.3%) was predominant cause of chronic liver disease in general and non-cirrhotic chronic liver disease (40.8% out of 8163). There was significant interregional differences (hepatitis C in North, hepatitis B in East and South, alcohol in North-east, Non-alcoholic Fatty Liver Disease in West) in the predominant cause of chronic liver disease. Hepatitis B (46.8% of 438 cases) was the commonest cause of hepatocellular Cancer and 11.7% had diabetes at the time of diagnosis²⁹.

Section D: Literature related to quality of life of patients with CLD.

A study was conducted by Usha Sree Puneem, Vanitha Rani Nagasubramanian, et al. to assess the health related quality of life and its determinants among South Indian type 2 diabetes mellitus with and without non-alcoholic fatty liver disease from November 2019 to 31 October, 2021. 358 subjects were included in the study. Quality of life was determined with SF-36 questionnaire, which comprises of eight domains. The results revealed that 61.4 % of the participants were males and 38.5% were females. The mean age of non alcoholic fatty liver disease subjects was 48.94 ± 7.9 years, and without non alcoholic fatty liver disease it was 49.28 ± 11.15 years. The literacy levels were significantly high ($p < 0.021$) in patients without non alcoholic fatty liver disease. Most of the patients were on low incomes. Most of the non alcoholic fatty liver disease patients disregarded their diabetic dietary modifications advised by the health professionals. The investigations of anthropometric and biochemical investigations between the two groups revealed notable differences. The subjects with non alcoholic fatty liver disease had higher levels of SGOT and SGPT. In aspects of blood lipids, T2DM-NAFLD displayed significantly higher levels of total cholesterol, LDL, triglycerides, HBA1c, and SUA, and there was no difference in HDL levels ($p > 0.05$). Diabetics without NAFLD had a high level of FBS and aberrant waist circumference. Lying in the normal ranges, the blood urea levels in both groups were depicted significantly. The study concluded that NAFLD and an increase in liver enzymes are major determinants of poor QOL in type 2 diabetic patients. Fasting blood sugar levels are negatively correlated with role physical and role emotion. Hence, clinicians should be constantly vigilant for NAFLD in type 2 diabetic patients, and regular NAFLD screening in type 2 diabetics should be considered and also advocate liver biopsy if the patients are with grade 3 fatty liver³⁰.

A cross-sectional survey was conducted by Neila Paula de Souza, Livia Melo Villar et-al to assess the health-related quality of life of patients with chronic liver disease. The study was conducted on 133 chronic liver disease patients, using three instruments: a demographic questionnaire, the Chronic Liver Disease Questionnaire, and Model for End-Stage Liver Disease index. Result of the study showed that the mean age of included subjects was 50.5 ± 13.3 years. The majority were male (66.2%), Caucasian (70.7%), and had a family income of US\$329-US\$658.2. Over half of the patients (56.4%) were infected by hepatitis C virus and 93.2% had low Model for End-Stage Liver Disease scores. Model for End-Stage Liver Disease score was related to age ($r=0.185$; $p=0.033$). Higher mean Chronic Liver Disease Questionnaire scores were obtained for emotional function ($39.70/SD \pm 12.98$) and while lower scores were obtained for abdominal symptoms ($16.00/SD \pm 6.25$). Fifty-two patients (39.1%) presented overall low (< 5) Chronic Liver Disease Questionnaire scores. Furthermore, Chronic Liver Disease Questionnaire score was related to family income ($r=0.187$, $p=0.031$). The result showed that Most individuals presented high mean Chronic Liver Disease Questionnaire scores, indicating low health-related quality of life, especially individuals with low family income³¹.

A cross-sectional study was conducted by Domenica Gazineo, Lea Godino, Virna Bui, Latifa El Mouttaqi, et al. to assess the health related quality of life among out-patients with Chronic Liver Disease. The study was conducted in Bologna, between September 2016 and July 2017. Two hundred and fifty four patients were included in the study. Health related quality of life was measured with ShortForm 12 (SF-12) and Nottingham Health Profile (NHP) questionnaires; depressive symptoms were measured with Beck Depression Inventory-II (BDI). CLD severity was measured using the MELD score and the sample was stratified into five classes according to lit. Group comparisons were conducted using the Kruskal–Wallis test. The result of the study revealed that mean age was 62.84 years (SD 11.75) and 57.9% were male. Most participants were affected by compensated cirrhosis (140.2%) and chronic hepatitis (40.2%), with a disease duration ≥ 5 years (69.3%). Regarding the MELD score, 67.7% of patients belonged to Class I, 29.9% to Class II, and 2.4% to Class III. There were not patients belonging to the Classes IV and V. No statistically significant differences were found in all SF-12 and NHP domains between the MELD classes,

except for CLD impact on sexual life and holidays ($p = 0.037$ and $p = 0.032$, respectively). A prevalence rate of 26% of depressive symptoms was reported, no statistically significant differences were found in BDI-II total scores between the three MELD classes. The study concluded that all domains of health related quality of life and depression were altered in CLDs patients, nevertheless CLD severity was not confirmed as an affecting factor for HRQOL³².

A cross-sectional study was conducted by Yan-Hua Che, Jing You, et al. to assess the Dynamics and liver disease specific aspects of quality of life among patients with chronic liver disease. A sample of 1040 patients from both out and in – patient department included in this study who were undergoing treatment for different HBV related liver disease collected from December 2012 to June 2013. ANOVA was used to compare the mean scores of EQ-5D and chronic liver disease questionnaire (CLDQ) among 5 disease groups. The relationship between demographic variables predicting global CLDQ scores and the domains of CLDQ was analysed. The results revealed that all domains of CLDQ, the means of EQ-5D value and EQ VAS exhibited significant decline with worsening of disease severity from uncomplicated HBV to liver failure. The multivariate regression demonstrated the reduction of mean scores of CLDQ domain at advanced stage. Patients with liver failure and HCC had more Health related quality of life impairment than other disease states. No effect of patient gender was found. Patient age was associated with 'fatigue' and 'worry' domains ($p=0.006$; $p=0.004$) but not with other domains and global scores of CLDQ and ED- 5D³³.

CHAPTER 2

RESEARCH METHODOLOGY, RESULTS AND DISCUSSIONS

Research methodology is a systemic, theoretical, analysis of method, applied to field of study. The research methodology aim at helping the researcher to answer the research question effectively, accurately and economically as far as possible. Research methodology is the technique used to organise and structure a study in a systematic manner from beginning to the end.

This chapter deals with the details of the research methodology adopted for the study which included research approach, research design, schematic representation of the study, setting of the study, population, sample and sampling technique, tools and techniques, pilot study, data collection process and plan of data analysis.

RESEARCH APPROACH

Research approach is a systematic investigation to establish the facts or principles as to collect information on a subject. The aim of the study was to assess the health related quality of life among patients with chronic liver disease. Hence, a quantitative research approach was selected for the present study.

RESEARCH DESIGN

The present study adopted descriptive research design, as the aim of the study was to assess the health related quality of life among patients diagnosed with chronic liver disease.

VARIABLES

Variable selected for the study were,

- Demographic Variables : age, gender, education, occupation, marital status, monthly income, place of living .
- Clinical Variables : Duration of illness and treatment, risk factors, changes in abdominal size, fluid and salt restriction, bleeding, regular check up, yellowish discolouration of eyes, changes in urine and stool colour and other systemic symptoms.
- Research variables: Health related quality of life

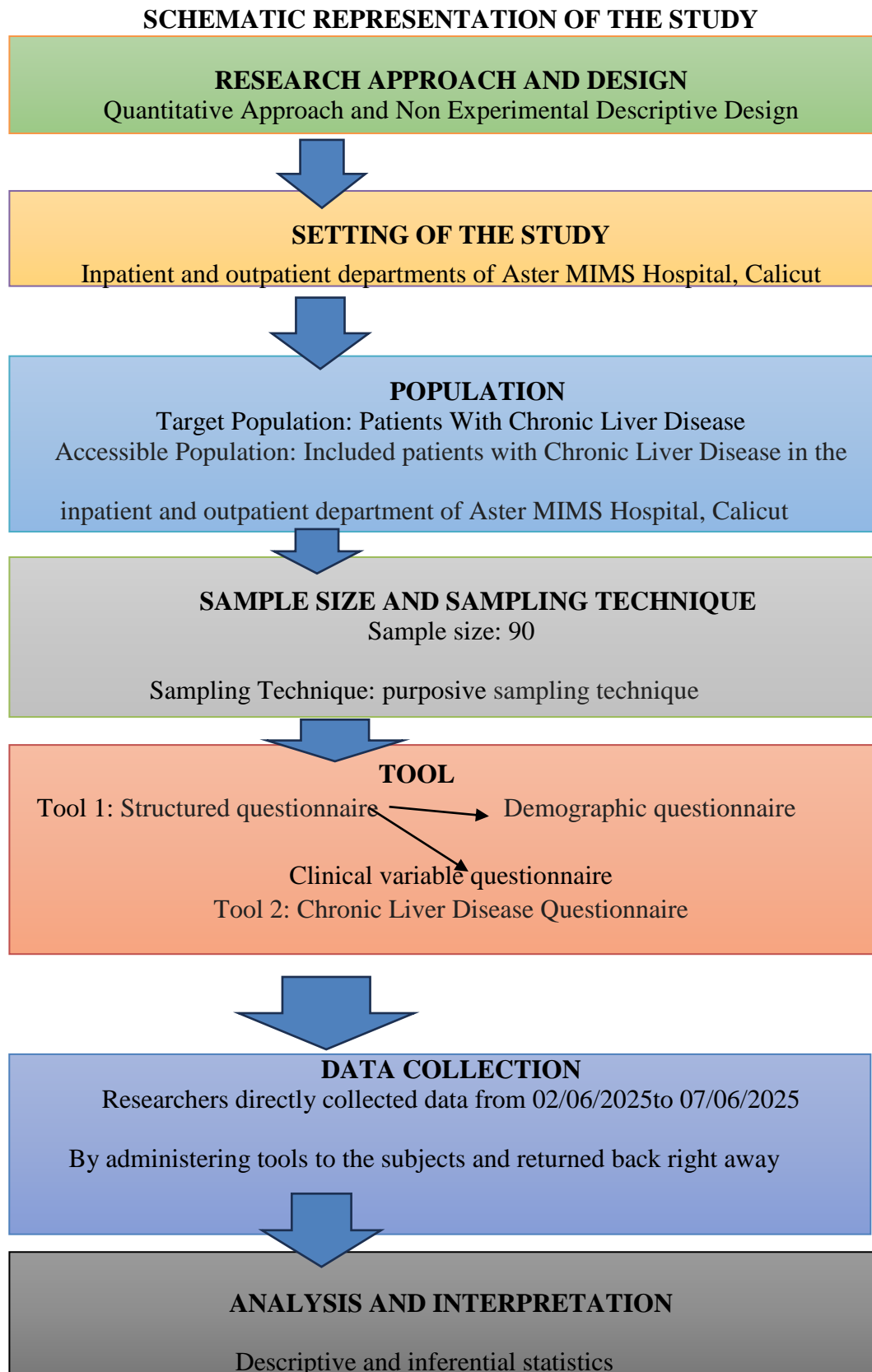


Figure 1.2 : Schematic Representation of the Research Design

SETTING OF STUDY

The present study was conducted in both out-patient and in-patient department of Aster MIMS Hospital, Calicut.

POPULATION

In this study, target population comprised of patients with chronic liver disease.

INCLUSION CRITERIA: The inclusion criteria for the present study were chronic kidney disease patients

- Who are within the age limit of 31 to 90 years.
- Who are willing to participate in the study.
- Who are able to read and write Malayalam.

EXCLUSION CRITERIA

Those who are,

- having speech or hearing problem
- cognitive impairment or psychiatric illness

SAMPLE AND SAMPLING TECHNIQUE

SAMPLE

Sample is the subset of a population comprising of those selected to participate in a study. Sampling is the process of selecting a portion of the population to represent an entire population. In this study sample consisted of 90 persons with chronic liver disease in both out-patient and inpatient department of Aster MIMS Hospital, Calicut.

SAMPLE SIZE AND CALCULATION

SAMPLING TECHNIQUE

Sample was selected on the basis of inclusion and exclusion criteria. In this study, purposive sampling technique was used. Data was collected among 90 participants.

TOOL AND TECHNIQUE

The researcher performed a thorough review of literature and had discussed with the experts prior to tool preparation. The following tools were developed to generate the necessary data:

- Tool 1: Structured questionnaire with two sections
 - Section A: Demographic variable questionnaire
 - Section B: Clinical variable questionnaire

- Tool 2: Chronic Liver Disease questionnaire

Data were collected from the chronic liver disease patients in inpatient and outpatient department at Aster MIMS Hospital, Calicut. Quantitative data was collected using tool 1 & 2.

DEVELOPMENT OF A TOOL

The data collection instruments (tools) were selected and prepared based on the objectives of the study, intense literature review, opinion on experts and researchers own experience in the field.

The following steps were taken for the development of the research tool:

- A review of research and non-research literature was made in related areas.
- A formal discussion was held with related professionals and their valuable suggestions for utilised for developing the tool.
- The tool was translated into Malayalam and retranslated to English by language experts.
- The research tool was pretested and was found feasible.
- The following tools were used to collect data:
 - Tool 1: Structured questionnaire with two sections
 - Section A: Demographic variable questionnaire

Section B: Clinical variable questionnaire

Tool 2: Chronic Liver Disease questionnaire

DESCRIPTION OF TOOL**TOOL 1****SECTION A: DEMOGRAPHIC QUESTIONNAIRE**

It was a structured questionnaire developed by investigators which includes a set of eight questions to assess the demographic characteristics of Chronic Liver Disease subjects which includes age, gender, education, marital status, occupation, monthly income, place of living and distance from resident area to hospital. The participants will instructed to fill the information in the place provided. There was no scoring for the items in this scale.

SECTION B: CLINICAL VARIABLE QUESTIONNAIRE

It is a structured questionnaire developed by researchers which includes a set of nineteen questions to assess the clinical characteristics of subjects with Chronic Liver Disease which includes duration of illness, risk factors of liver disease, if an alcoholic number of drinks per week, family history of liver disease, fluid restriction, salt restriction, duration of treatment, skin and mucosal colour changes, changes in abdominal size, swelling on legs and ankles, dark coloured urine, pale or bloody coloured stool, nausea, vomiting, loss of appetite, weight loss and gain, easy bleeding or bruising, regular check-up. There was no scoring for the items in this scale.

TOOL 2: CHRONIC LIVER DISEASE QUESTIONNAIRE

Chronic Liver Disease Questionnaire is a standardised questionnaire developed by Z.M. Younossi to evaluate the impact of chronic liver disease on quality of life. The chronic liver disease questionnaire includes 29 items each of which were scored on a Likert scale from 1 to 7 with higher score indicating excellent health related quality of life. The response of Chronic Liver Disease Questionnaire were ranging from all of the time (1), most of the time(2), a good bit of time (3), some of the time (4), a little of the time (5), hardly any of the time(6), none of the time (7). Each of its item belong to 6 non overlapping health related quality of life domains like abdominal symptoms, fatigue, systemic symptoms, activity, emotional function and worry. The permission to translate the CLDQ to Malayalam language and to use it was obtained from the author. The standardised Chronic Liver Disease Questionnaire was translated to Malayalam and the Malayalam content of the tool was validated by one expert in Malayalam language after seeking permission from the expert. The total score ranges from 1 to 203. Based on the scores the health related quality of life of subjects with Chronic Liver Disease were categorised as poor (1 to 50), fair(51 to 101), good(102 to 152), excellent(153 to 203).

VALIDITY OF TOOL

The content validity of the tools was obtained by giving the tools to five experts along with the problem statement, objectives and purpose of the study and blue print, answer key and criterion checklist. The experts were selected from various specialties including nursing and clinical research on the basis of experience, expertise and interest to the problem being selected. The validators are requested to give their opinion and suggestion regarding the adequacy, relevance and appropriateness of item. Modifications were done as per suggestions.

➤ Tool 1

- Section A: Demographic Questionnaire

There was 100% agreement for 9 items.

- Section B: Clinical pro forma

There was 100% agreement for 19 items.

- Tool 2: The chronic liver disease questionnaire is a standardised tool developed by Z.M Younnosi. It consists of 29 items. The tool has good structural and construct validity.

RELIABILITY OF TOOL

The extent to which a measurement is free from measurement error; more broadly, the extent to which score for people who have not changed are the same for repeated measurements; statistically the proportion of total variance in a set of scores that is attributable to true differences among those being measured. Main types of reliability measures are stability, internal consistency, and equivalence. Stability of an instrument is the extent to which similar scores are obtained on separate occasions. An instrument may be said to be internally consistent or homogenous to the extent that its items measure the same trait. Stability aspect of reliability means research instrument provides same result when it is used consecutively for two or more times. Equivalence, in the context of reliability assessment, primarily concerns the degree to which two or more independent observers or coders agree about scoring. In this study stability was used to measure the reliability of the tool. The stability of an instrument is the extent to which similar results are obtained on separate administration and is established by test re-test method and coefficient of correlation is calculated by using the formula of Karl Pearson's correlation coefficient. Test retest refers to the extent to which a test or measure administered at one time is correlated with the same test or measure that is administered to the same people at another time. In this study tool was administered to 10 subjects twice at 2 different occasions. The score of tool administered at two different occasions were compared and calculated using the formula of correlation coefficient. The result of correlation coefficient ranges between -1.00 through 0.0 and +1.00. +1 score indicates perfect correlation, 0.0 score indicates no correlation. A score above 0.70 indicates an acceptable level of correlation of tool. In this study the coefficient of correlation of section A and B of tool 1 was 1 and 0.94 respectively. The calculated correlation coefficient of tool 2 was 0.99. In another study conducted by Taru V, et al. for validation of Chronic Liver Disease Questionnaire and to assess the performance of CLDQ in Romanian population CLDQ showed excellent overall reliability (Cronbach's alpha=0.93).

PILOT STUDY

Pilot study refers to a small scale version, or trial run, of a study done in preparation for a major study; designed to assess the feasibility of, and to support refinements of the protocols, methods and procedures to be used in a large scale study, such as clinical trial. The investigator conducted pilot study at ASTER MIMS Hospital, Calicut. Permission was obtained from concerned authorities of the hospital. The purpose of the study was explained to the subjects prior to the study. Structured questionnaires were administered to 10 subjects for collection of details of subject and to find the health related quality of life, and the collected data was statistically analysed. The tool was found to be reliable and the study was found to be feasible.

DATA COLLECTION PROCESS

Data collection is the gathering of information to address a research problem. After obtaining a formal administrative sanction to conduct the study was obtained from the Head of the Department. The data was collected from 02/06/2025 to 07/06/2025. The researchers were divided into two groups and went for data collection. The data was collected from Chronic Liver Disease patients in inpatient and outpatient department of Gastroenterology in ASTER MIMS Hospital. Convenient sampling technique was used to select 90 subjects who were chronic liver disease patients in the age group 31 to 90 years. Investigators gave necessary instructions regarding data collection, obtained the informed consent for the study and remained in the setting till subjects completed the tools and returned it.

PLAN FOR DATA ANALYSIS

Data analysis is a process of organising and synthesising the data so as to answer research questions. Data was analysed using descriptive and inferential statistics and the results were expressed in terms of frequency

and percentage. Relationship between health related quality of life and selected demographic and clinical variables were analysed using Chi-square test.

ANALYSIS AND INTERPRETATION

This chapter deals with the analysis of data collected and the interpretation of those data. The data collected for this study is tabulated, analyzed and interpreted by using descriptive and inferential statistics.

ORGANISATION OF THE STUDY FINDINGS

Section I: Description of sample characteristics

Section 1.1: Description of demographic characteristics of the subjects

Section 1.2: Description of clinical characteristics of the subjects

Section II: Health related quality of life among subjects with Chronic Liver disease .

Section III: Association between health related quality of life among subjects with. Chronic Liver disease and the selected demographic variables and clinical variables.

Section I: Description of sample characteristics

Section 1.1: Description of demographic characteristics of the subjects

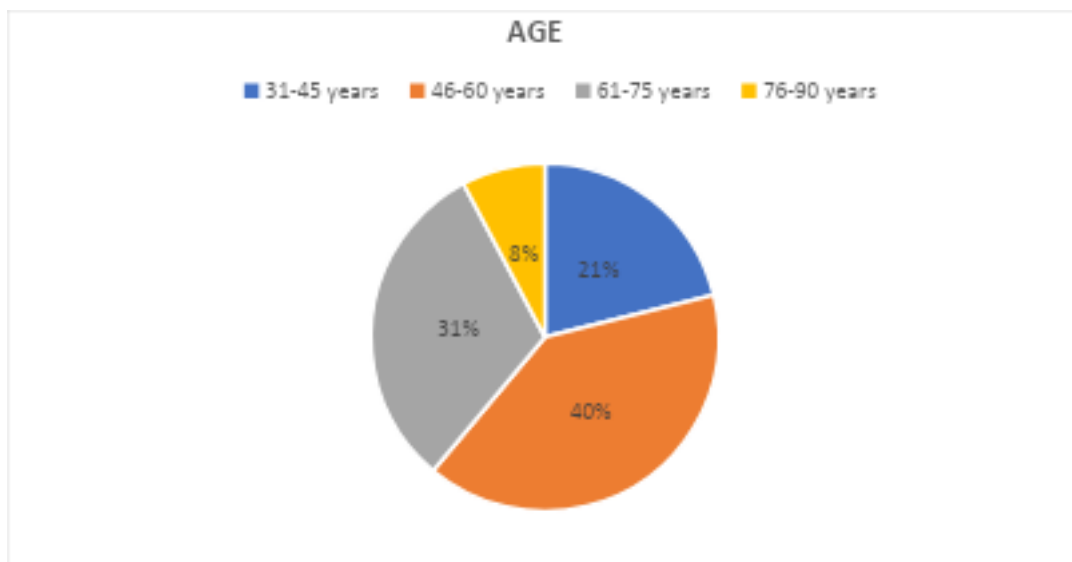


Figure 1.3 Frequency and percentage distribution of sample according to demographic characteristics (Age)

Data depicted in Figure 1.3 shows that most (40%) of the subjects were in the age group of 46 – 60 years, 31.1% were in the age group of 61 -75 years, 7.7% were in the age group of 76-90 years and 21.2% were in the age group of 31 – 45 years.

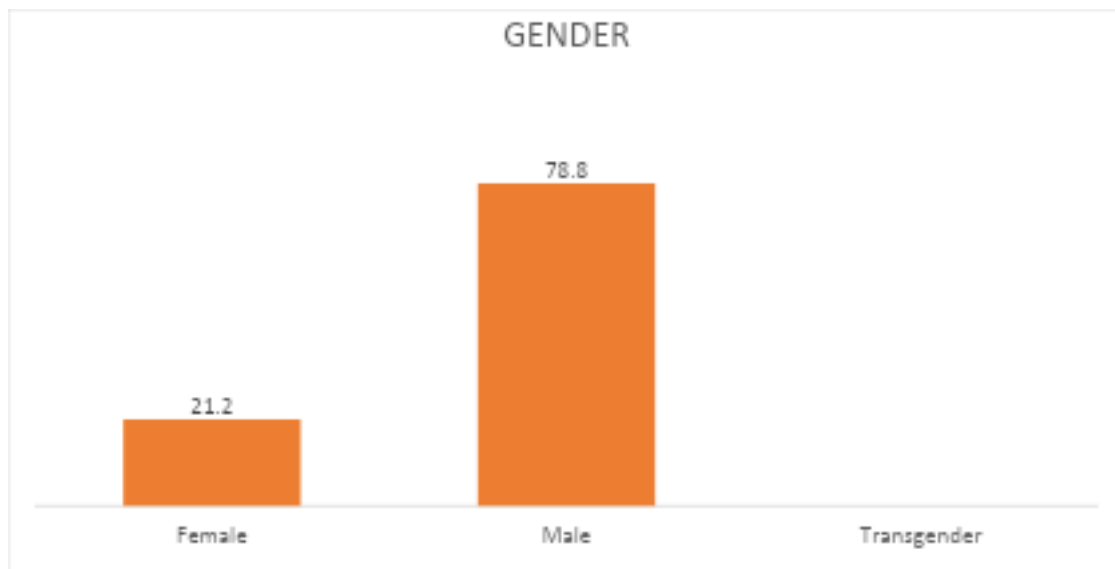


Figure 1.4: Frequency and percentage distribution of Chronic Liver disease subjects on selected demographic variables based on gender

Data depicted in Figure 1.4 shows that Majority (78.8%) of the subjects were males and 21.2% of them were females.

Table 1.1 Frequency and percentage distribution of Chronic Liver disease subjects on selected demographic variables based on marital status, occupation, monthly income.

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
EDUCATION		
PRIMARY EDUCATION	22	24.4
SECONDARY EDUCATION	44	48.8
GRADUATE	18	20
POST GRADUATE	6	6.6
MARITAL STATUS		
SINGLE	10	11.2
MARRIED	67	85.5
SEPARATED	1	1.1
WIDOW	2	2.2
OCCUPATION		
GOVERNMENT EMPLOYEE	7	7.7
PRIVATE EMPLOYEE	43	47.7
DAILY WAGE	33	36.6

OTHERS	7	7.7
MONTHLY INCOME		
RS.10001-30000	30	33.4 by
RS.30001-50000.	18	20
>RS.50001	42	46.6

Table 1.1 shows that 48.8% of the subjects had secondary education, 24.4% had primary education, 20% were graduates, 6.6% were post graduates. Majority (85.5%) of the subjects were married, 11.1% were single, 2.2% were widow and only 1.1% were separated. Most (7.7%) of the subjects were doing other jobs, 47.7% of them were private employees, 36.6% were daily wagers and 7.7% were government employees. The monthly income of 33.3% of the subjects were between Rs.10,001 to 30,000, 20% had between Rs.30,001 to 50,000 and only 46.6% had income greater than Rs.50,001.

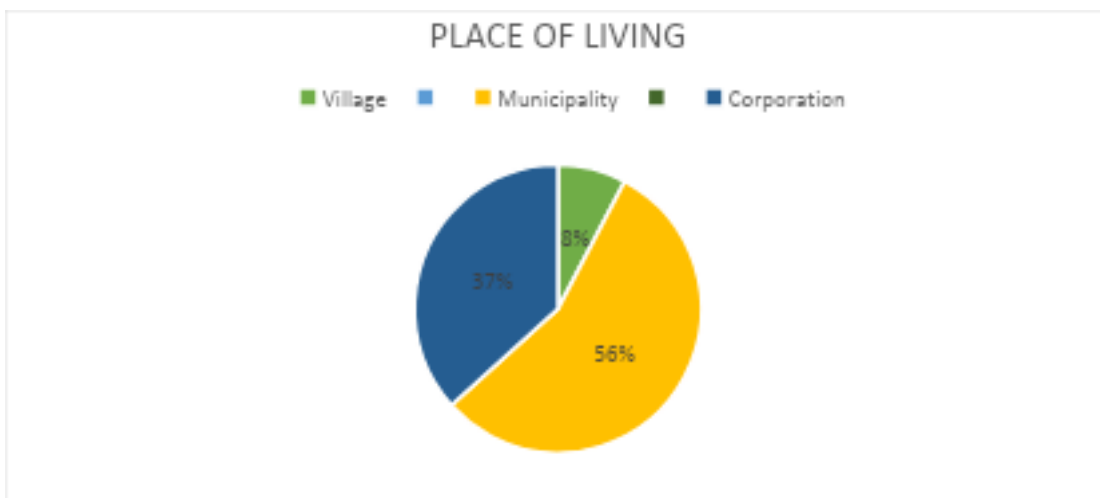


Figure 1.5 Frequency and percentage distribution of Chronic Liver disease subjects selected demographic variables based on place of living.

Figure 1.5 reveals that majority (7.7%) of the subjects were villagers, 55.5% were living in municipality and 36.6% were living in corporation.

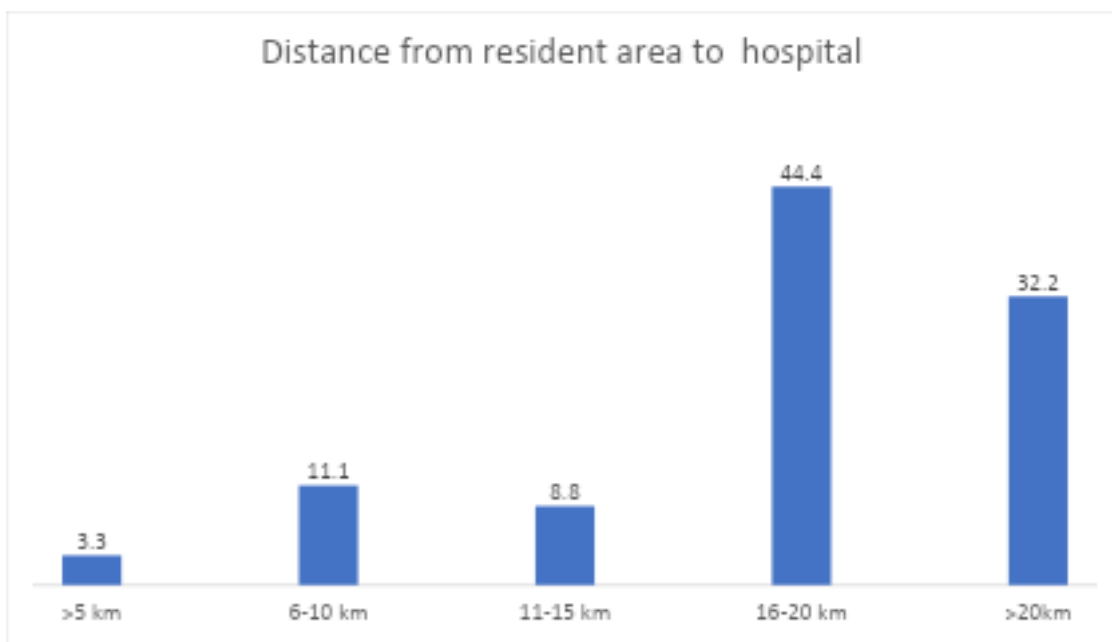


Figure 1.6 Frequency and percentage distribution of Chronic Liver disease subjects selected demographic variables based on distance from resident area to hospital.

Figure 1.6 shows that 32.2% of subjects were residing at a distance greater than 20 km away from the hospital, 44.4% resided at a distance 16 – 20 km away from the hospital, 11.1% resided at a distance of 6 – 10 km and 11 – 15 km away from the hospital respectively and only 3.3% resided at a distance of less than 5 km from the hospital.

Section 1.2: Description of clinical characteristics of the subjects

Table 2.1 Frequency and percentage distribution of Chronic Liver disease subjects selected clinical variables based on duration of illness, any known risk factors of Chronic Liver Disease.

CLINICAL VARIABLES	FREQUENCY	PERCENTAGE
DURATION OF ILLNESS		
<3 YEARS	20	22.3
4-6 YEARS	31	34.4
>6 YEARS	39	43.3
ANY KNOWN RISK FACTORS OF CHRONIC LIVER DISEASE		
HEPATITIS B	4	4.4
ALCOHOLISM	21	23.3
DIABETES MELLITUS	20	22.2
DYSLIPIDEMIA	1	1.1
RIGHT SIDE HEART FAILURE	1	1.1
UNKNOWN FACTORS	4	4.4
OTHERS	4	4.4

Table 2.1 shows that the duration of illness of 23.3 % of the subjects was less than 3 years, 34.4% had 4-6 years of duration of illness and the remaining 43.3 % reported of having greater than 6 years of duration of illness. About the risk factor of chronic liver disease majority (23.3%) of subjects had history of alcoholism, 4.4% had Hepatitis B, 22.2% had diabetes mellitus, 1.1% had dyslipidemia, 1.1% had right sided heart failure, 4.4% have unknown factors and 4.4% have other risk factors

Table 2.2 Frequency and percentage distribution of Chronic Liver disease subjects on selected clinical variables based on number of drinks per week, family history of liver diseases, fluid restriction, salt restriction.

CLINICAL VARIABLES	FREQUENCY	PERCENTAGE
IF AN ALCOHOLIC NUMBER OF DRINKS PER WEEK		
LESS THAN 7 DRINKS	7	7.7
7-14 DRINKS	11	12.2
15-21 DRINKS	4	4.4

FAMILY HISTORY OF LIVER DISEASES		
YES	14	15.5
NO	76	84.5
FLUID RESTRICTION		
YES	65	72.3
NO	25	27.7
SALT RESTRICTION		
YES	77	85.6
NO	13	14.4

Table 2.2 reveals that 12.2% had 7-14 alcoholic drinks per week, 7.7% had less than 7 drinks, 4.4% of alcoholic people drunk 15-21 drinks per week. 84.4% of subjects did not have any family history of liver disease 15.5% had family history of liver disease. 72.2% of the subjects had fluid restriction and 27.7% did not have any fluid restriction. 85.6% were on salt restriction and 14.4% did not have any salt restriction.

Table 2.3 Frequency and percentage distribution of Chronic Liver disease subjects on selected clinical variables based on length of treatment for chronic liver disease, yellowish discoloration of skin and eyes, increase in abdominal size, swelling in legs and ankles.

CLINICAL VARIABLES	FREQUENCY	PERCENTAGE
LENGTH OF TREATMENT FOR CHRONIC LIVER DISEASE		
<1 YR	26	28.8
<3 YR	23	25.6
<6 YR	41	45.6
YELLOWISH DISCOLOURATION OF SKIN AND EYES		
YES	45	50
NO	45	50
INCREASE IN ABDOMINAL SIZE		
YES	54	60
NO	36	40
SWELLING IN LEGS AND ANKLES		
YES	67	74.5

NO 23 25.5

Table 2.3 shows that 28.8% of the subjects were on treatment for CLD for less than or equal to 1 year, 25.5% for less than or equal to 3 years and 45.5% were under treatment for less than or equal to 6 years. 50% of subjects had yellowish discoloration on skin and eyes, 50% did not have yellowish discoloration. 60% of subjects had complaints of increase in abdominal size and 40% did not have the same. 74.4% of the subjects reported swelling in legs or ankles and 25.5% did not have swelling.

Table 2.4 Frequency and percentage distribution of Chronic Liver disease subjects on selected clinical variables based on dark coloured urine, bloody or dark coloured stool, nausea and vomiting, decrease in appetite.

CLINICAL VARIABLES	FREQUENCY	PERCENTAGE
URINE APPEAR DARK IN COLOUR		
YES	60	66.6
NO	30	33.4
BLOODY OR DARK COLOURED STOOL		
PRESENT	43	47.7
ABSENT	47	52.3
NAUSEA AND VOMITING		
PRESENT	82	91.1
ABSENT	8	8.9
DECREASE IN APPETITE		
PRESENT	90	100

Table 2.4 depicts 66.6% of subjects did not have dark coloured urine and remaining 33.3% had dark coloured urine. 52.2% of the subjects did not have dark coloured stool and 47.7% had the same. 8.8% of subjects did not have nausea and vomiting and 91.1% had nausea and vomiting. 90% had complaints of decrease in appetite and no normal appetite.

CLINICAL VARIABLES	FREQUENCY	PERCENTAGE
TYPE OF DIET		
PROTEIN RICH DIET	64	71.1
FAT RICH DIET	11	12.2
CARBOHYDRATE RICH DIET	15	16.7
WEIGHT LOSS		
PRESENT	53	47.7
ABSENT	37	43.3

WEIGHT GAIN		
PRESENT	43	47.7
ABSENT	47	52.3
BLEEDING		
PRESENT	8	8.9
ABSENT	82	91.1
FOLLOWING REGULAR CHECK UP		
PRESENT	90	100

Table 2.5 Frequency and percentage distribution of Chronic Liver disease subjects on selected clinical variables based on type of diet, Weight loss, Weight gain, bleeding, following regular check-up.

Table 2.5 shows that 71.1% of the subjects takes protein rich foods in their regular diet, 9.9% had fat rich diet and 13.5% had carbohydrate rich diet. 43.3% of the subjects did not experienced weight loss and 47.7 % had weight loss. 52.2% of the subjects did not experience weight gain whereas 47.7 % had weight gain. 91.1% not experienced and only 8.8% had bleeding or bruising.100% followed a regular medical check up

Section 2: Health related quality of life among subjects with Chronic Liver disease.

This section deals with the grading of the health related quality of life of subjects with Chronic Liver Disease. The data was collected using the Malayalam version of standardised Chronic Liver Disease questionnaire developed by Z.M. Younossi. The data regarding health related quality of life among Chronic Liver disease subjects was analysed using descriptive and inferential statistics in terms of percentage and is presented in figure 2.



Figure 2.1: Pie diagram showing percentage distribution based on the grading of health related quality of life among subjects with Chronic Liver disease.

Figure 2.1 shows majority (52.2%) of the subjects with Chronic Liver Disease had good health related quality of life, 13.5% had fair health related quality of life and only 15.3% had excellent health related quality of life .None of them had poor health related quality of life.

From the above findings it was found that majority of subjects with Chronic Liver Disease had good health related quality of life. Item wise percentage distribution of response of subjects on the domains of health related quality of life among subjects with Chronic Liver disease The Malayalam version of standardised Chronic Liver Disease questionnaire developed by Z.M. Younossi was used for data collection. The final Chronic Liver Disease questionnaire (CLDQ) instrument includes 29 items each of which are scored on a Likert scale ranging from 1 to 7 with higher scores indicating excellent health related quality of life . The items belong to 6 non-overlapping health related quality of life (HRQOL) domains like abdominal symptoms (items 1 ,5, 17), activity (items7, 9, 14) ,emotional function (items10,12,15,16,19,20,24,26), fatigue (items2,4,8,11,13), systemic symptoms (items3, 6 ,21, 23 ,27), worry (items18 ,22, 25, 28, 29). The Item wise percentage distribution of response of subjects on various domains of health related quality of life among subjects with Chronic Liver Disease is presented in tables 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6 respectively

Table 3.1 Item wise percentage distribution of response of subjects on the domain (abdominal symptoms) of health related quality of life among subjects with Chronic Liver Disease

ITEMS	none of the time (%)	hardly any of the time (%)	little of the time (%)	some of the time (%)	good of the time (%)	most of the time (%)	all of the time (%)
ABDOMINAL BLOATING	24.4	12.2	27.7	15.5	10	5.5	4.4
ABDOMINAL PAIN	3.3	8.8	14.4	14.4	20	20	18.8
ABDOMINAL DISCOMFORT	18.8	13.3	17.7	18.8	6.6	12.2	11.11

Table 3.1 shows that 22% of subjects felt abdominal bloating, 20% felt eventually, 14% felt in most occasions, 12% did not felt any abdominal bloating whereas 11% felt abdominal bloating almost never and all of the time and 10% for a short period of time. It was found that 20% almost never felt abdominal pain, 19% felt for a short time, 18% sometimes felt, 17% never felt, 14% felt for a long period of time, 8% felt in most occasions whereas only 4% felt for all of the time. 24% almost never felt abdominal discomfort, 17% felt eventually, 16% had for a significant amount of time, 15% never felt, 11% had for most occasions and for a long period of time 6% always had abdominal discomfort.

Table 3.2 Item wise percentage distribution of response of subjects on the domain(fatigue) of health related quality of life among subjects with Chronic Liver Disease.

ITEMS	none of the time (%)	hardly any of the time (%)	little of the time (%)	some of the time (%)	good of the time (%)	most of the time (%)	all of the time (%)
FATIGUE	17.7	14.4	24.4	20	4.4	13.3	4.4
SLEEPINESS	17.7	13.3	21.1	22.2	7.7	8.8	7.7
DECREASE D	28.8	17.7	28.8	4.4	3.3	6.6	10

STRENGTH DECREASE D ENERGY DROWSINES S							
	16.6	13.3	21.1	24.4	5.5	11.11	2.2
	20	21.1	12.2	10	16.6	12.2	5.5

Table 3.2 shows that 13.3% of subjects felt fatigue for most of the time, 4.4% for a long period of time, 20% sometimes, 24.4% for a short period, 4.4% for all of the time and 14.4% almost never felt .22.2% had daytime sleepiness eventually, 8.8% usually had 7.7% had the same for a long period of time, 21.1% almost never experienced, 13.3% rarely ever felt whereas 7.7% always had 17.7% did not have any complaints of day time sleepiness. 4.5% of subjects experienced decreased strength for some of the time, 28.8% had for a significant amount of time, 6.6% frequently, 28.8% for a short period of time 17.7% almost never experienced, 10% had for all of the time and only 28.8% did not experienced decreased strength.

For a long period of time 5.5% felt decreased energy, 24.4% felt for some of the time, 11.11% felt in most occasions 21.1% felt for an instant period of time, 2.2% felt for all of the time, 13.3% almost never felt it and the same percentage never felt. Some of the time 10% felt drowsiness, 12.2% felt in most occasions and for a short period of time, 21.1% almost never felt 16.6% for a good bit of time, 5.5% felt for all of the time and 20% never felt drowsiness.

Table 3.3 Item wise percentage distribution of response of subjects on the domain (systemic symptoms) of health related quality of life among subjects with Chronic Liver disease.

ITEMS	N on the time (%)	Hardly any of the time (%)	Little of the time (%)	Some of the time (%)	Good of the time (%)	Most of the time (%)	All of the time (%)
BODY PAIN	24.4	18.8	12.2	21.1	6.6	8.8	7.7
SHORTNESS OF BREATH	18.8	14.4	24.4	20	4.4	12.2	5.5
MUSCLE CRAMPS	18.8	13.3	17.7	18.8	6.6	12.2	11.1
DRY MOUTH	15.5	21.1	17.7	13.3	14.4	12.2	5.5
TROUBLED BY ITCHING	14.4	21.1	24.4	14.4	12.2	10	3.3

Table 3.3 shows that 21.1% of subjects sometimes experienced body pain, 8.8% in most occasions, 6.6% for a good bit of time, 12.2% for an instant period of time 7.7% always, 18.8% rarely and only 24.4% never 18.8(%) did not have shortness of breath, 24.4% had for a short period of time, while 14.4% for hardly any of the time and some of the time 12.2% frequently and 4.4% had for a significant amount of time and 5.5 had all of the time. It was found that 6.6% eventually felt muscle cramps, 6.6% for a long period of time, 17.7% for a short period of time, 12.2% in most occasions whereas 13.3% almost never 18.8% did not have 11.1% had the complaint for all of the time. 15.5% did not have any complaints of dry mouth and 13.3% had for some of the time, 14.4% for a significant amount of time, 17.7% for a short period of time, 12.2% had mouth in most occasions, 15.5% almost never had dry mouth and the remaining 5.5% for all of the time. 14.4 did not have any trouble with itching 12.2% for a long period of time, 21.1% almost never, 24.4% for

some of the time and for little of the time 3.3% had itching for all of the time whereas only 10% had in most occasions.

Table 3.4 Item wise percentage distribution of response of subjects on the domain(activity) of health related quality of life among subjects with Chronic Liver disease

ITEMS	Non e of the time (%)	Har dly any of the time (%)	Littl e of the time (%)	Som e of the time (%)	Goo d of the time (%)	Most of the time (%)	All of the tim e (%)
DECREASE D APPETITE	17.7	14.4	24.4	20	4.4	13.3	4.4
DIFFICULT Y IN LIFTING OBJECTS	28.8	17.7	28.8	4.4	3.3	6.6	10
DIET LIMITATIO N	16.6	20	12.2	24.4	16.6	4.4	5.5

Table 3.4 reveals that 20% of subjects reported decreased appetite for some of the time, 14.4% had decreased appetite for an instant period of time, long period of time and for hardly any of the time respectively, whereas 13.3% had decreased appetite in most occasions, 4.4% had decreased appetite for all of the time and only 17.7% of them never experienced the same. It was found that 4.4% sometimes experienced difficulty in lifting objects, 6.6% usually experienced difficulty in lifting objects, 3.3% experienced difficulty for a significant amount of time, 28.8% experienced difficulty for a short period of time, 10% had difficulty in all of the time, 17.7% almost never had difficulty in lifting objects and only 28.8% did not experienced any difficulty in lifting objects. 24.4% eventually worried about diet limitations whereas 16.6% worried for a significant amount of time, 12.2% worried for a short period of time, 20% rarely ever worried about diet limitation, 4.4% worried about diet limitation in most occasions, 16.7% never worried about diet limitation and only 5.5% worried for the same in all of the time.

Table 3.5 Item wise percentage distribution of response of subjects on the domain(emotional function) on health related quality of life among subjects with Chronic Liver disease

ITEMS	N on e of th e ti m e (%))	Har dly any of the time (%)	Littl e of the time (%)	Som e of the time (%)	Goo d of the time (%)	Mos t of the time (%)	All of the time (%)
ANXIETY	16.6	15.5	24.4	20	5.5	12.2	4.4
UNHAPPINESS	17.7	14.4	21.1	14.4	13.3	11.1	7.7

IRRITABILITY	14.4	22.2	23.3	14.4	12.2	10	3.3
DIFFICULTY IN SLEEPING	18.8	14.4	24.4	20	4.4	12.2	5.5
MOOD SWINGS	15.5	21.1	24.4	14.4	12.2	10	2.2
SLEEPLESSNESS AT NIGHT	8.8	24.4	21.1	18.8	14.4	6.6	5.5
FEELING DEPRESSED	18.8	13.3	17.7	18.8	6.6	12.2	11.1
PROBLEM IN CONCENTRATING	15.5	21.1	17.7	13.3	14.4	12.2	5.5

Table 3.5 shows that 24.4% of subject had anxiety for a short period of time, 5.5% had significant amount of time 20% for some of the time, 12.2% most of the time, 4.4 % all of the time 16.6% did not have anxiety. 14.4% experience unhappiness for some of the time, 21.1% for a short period of time 13.3 % felt a significant amount of time, 14.4% almost never 11.1% for most of the time 17.7% did not experienced and only 7.7% experienced for all of the time 23.3% had irritability for a short period of time, 14.4% never had 22.2% for almost none of the time, 14.4% for some of the time, 10% for most occasions, 12.2% for significant amount of time 3.3% for all the time. 20% had disturbed sleep for some of the time, 12.2% for most occasions, 18.8 % did not 18.8% for significant amount of time, 5.5% had for a short period of time, 14.4% almost never had 5.5% had sleep disturbance for all of the time.. It was found that 18.8% of the subjects sometimes felt depression, 17.7% felt depression for a short time, 18.8% did not experienced depression, 13.3% almost never felt, whereas another 6.6% felt depressed for a significant amount of time, 12.2% felt or most of the time and 11.1% felt depressed for all the time. 17.7% had problem in concentrating for a short period of time, 13.3% sometimes had problem in concentrating, 15.5% had no in concentration, 21.1% almost never had problem in and another 12.2% had problem in concentration for most of the time, 14.4% had problem in concentration for a significant amount of time and remaining 5.5% had the same for all of the time respectively.

Table 3.6 Item wise percentage distribution of response of subjects on the domain (worry) on health related quality of life among subjects with Chronic Liver disease.

ITEMS	no ne of th e ti m e (%)	har dly any of the tim e (%)	lit tl e th e ti m e (%)	som e of the time (%)	goo d of the time (%)	mos t of the time (%)	all of th e ti me (%)
WORRIED BY IMPACT OF LIVER DISEASE	28.8	17.7	28.8	4.4	3.3	6.6	10
WORRIED ABOUT SYMPTOMS WILL DEVELOP INTO MAJOR PROBLEMS	31.1	10	18.8	16.6	11.1	8.8	3.3

WORRIED ABOUT CONDITION GETTING WORSE	14.4	21.1	24.4	14.4	12.2	10	3.3
WORRIED ABOUT NEVER FEELING BETTER	16.6	13.1	21.1	24.4	5.5	11.11	2.2
CONCERNED ABOUT AVAILABILITY OF LIVER FOR TRANSPLANTATION	28.8	4.4	17.7	28.8	6.6	10	3.3

Table 3.6 shows that 4.4% of subject worried about the impact of liver disease on family for some of the time, 28.8% worried for little of the time, 3.3% worried frequently, 17.7% worried for just a very small amount of time, 6.6% worried in most occasions, whereas 10% worried for all of the time and remaining 28.8% not worried about the impact. 16.6% worried about symptoms developing into major problem for some of the time, 18.8% worried for little of the time, 11.1% worried for a significant period of time whereas 8.8% worried for most of the time, 10% worried for hardly any of the time and the same percentage worried for just a very small amount of time and remaining 3.3% worried for all of the time 2.2% worried about never feeling better for a short period of time, 24.4% worried for some of the time and 13.3% a significant amount of time, 16.6% not worried about never feeling better, It was found that most 28.8(%) of the subjects not concerned about liver transplantation, 28.8% had concerned about liver transplantation for a short period of time, 4.4% almost never concerned about liver transplantation and another 28.8% concerned about liver transplantation for some of the time, 3.3% always concerned about liver transplantation, 10% concerned about liver transplantation in most occasion and 17.7% concerned for a significant amount of time respectively.

Section III: Association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables.

This section deals with the analysis of association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables such as age, gender, education, marital status, occupation, monthly income, place of living, distance from resident area to hospital which was found using chi-square analysis and is presented in the table 4.1. For chi square analysis each cell value should be at least 5. The obtained cell values were less than 5 so the investigators combined the health related quality of life grading into good/excellent and fair categories and investigators also combined various cells of demographic variables. The following null hypothesis (H01) was stated:

- H01 : There is no significant association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables at 0.05 significance.

Association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables.

VARIABLES	CHI SQUARE VALUE	df	P VALUE
AGE	2.473	6	0.871
GENDER	0.77	2	0.962
EDUCATION	7.178	6	0.305

MARITAL STATUS	2.358	6	0.885
OCCUPATION	5.752	6	0.452
MONTHLY INCOME	6.884	4	0.142
PLACE OF LIVING	4.047	4	0.40
DISTANCE FROM RESIDENT AREA TO HOSPITAL	6.959	8	0.541

Association between health related quality of life among subjects with Chronic Liver disease and the selected clinical variables.

VARIABLES	CHI-SQUARE VALUE	df	P VALUE
DURATION OF ILLNESS	5.944	4	0.203
ANY KNOWN RISK FACTORS OF CHRONIC LIVER DISEASE	18.592	26	0.853
IF AN ALCOHOLIC NUMBER OF DRINKS PER WEEK	5.905	4	0.206
FAMILY HISTORY OF LIVER DISEASES	1.725	2	0.422
FLUID RESTRICTION	1.093	2	0.579
SALT RESTRICTION	1.878	2	0.391
LENGTH OF TREATMENT FOR CHRONIC LIVER DISEASE	5.944	4	0.203
YELLOWISH DISCOLOURATION OF SKIN AND EYES	0.224	2	0.894
INCREASE IN ABDOMINAL SIZE	0.978	2	0.613
SWELLING IN LEGS AND ANKLES	3.756	2	0.152
URINE APPEAR DARK IN COLOUR	0.078	2	0.962
BLOODY OR DARK COLOURED STOOL	1.437	2	0.487
NAUSEA AND VOMITING	0.752	2	0.687

DECREASE IN APPETITE	0.714	2	0.700
TYPE OF DIET	0.568	2	0.753
WEIGHT LOSS	0.551	2	0.759
WEIGHT GAIN	0.728	2	0.625
BLEEDING	6.247	2	0.044
FOLLOWING REGULAR CHECK-UP	1.816	2	0.403

RESULTS

section 1 : sample description.

The collected data were analyzed according to the objectives of the study. Most participants (40%) were aged 46–60 years, followed by 31.1% aged 61–75 years, 21.2% aged 31–45 years, and 7.7% aged 76–90 years. The majority were males (78.8%), while 21.1% were females. Regarding education, 48.8% had secondary education, 24.4% primary education, 20% were graduates, and 6.6% were postgraduates. Most subjects were married (85.5%), with 11.1% single, 2.2% widowed, and 1.1% separated.

In terms of occupation, 47.7% were private employees, 36.6% daily wagers, 7.7% government employees, and 7.7% engaged in other jobs. Monthly income was above Rs.50,001 for 46.6% of subjects, Rs.10,001–30,000 for 33.3%, and Rs.30,001–50,000 for 20%. Most participants lived in municipalities (55.5%), followed by corporations (36.6%) and villages (7.7%). Nearly 44.4% lived 16–20 km from the hospital, 32.2% more than 20 km away, and smaller proportions lived closer.

Regarding illness duration, 43.3% had been ill for more than 6 years, 34.4% for 4–6 years, and 23.3% for less than 3 years. The major risk factors for chronic liver disease were alcoholism (23.3%), diabetes mellitus (22.2%), hepatitis B (4.4%), and other or unknown causes. Most subjects (84.4%) had no family history of liver disease. A majority followed fluid restriction (72.2%) and salt restriction (85.6%).

Common symptoms included nausea and vomiting (91.1%), decreased appetite (90%), leg swelling (74.4%), abdominal distension (60%), and yellowish discoloration of skin or eyes (50%). About 57.6% consumed protein-rich diets, while others consumed fat- or carbohydrate-rich diets. Nearly half reported weight loss (47.7%) and weight gain (47.7%). Only 8.8% experienced bleeding or bruising. All participants (100%) attended regular medical check-ups.

section 2: health related quality of life among subjects with chronic liver disease.

This section describes the health-related quality of life (HRQOL) among subjects with chronic liver disease. Data were collected using the Malayalam version of the standardized Chronic Liver Disease Questionnaire developed by Z.M. Younossi, which consists of 29 items scored on a 7-point Likert scale. Higher scores indicate better quality of life. HRQOL was graded as poor (0–50), fair (51–101), good (102–152), and excellent (153–203).

The findings revealed varying levels of physical and psychological symptoms among participants. Abdominal bloating was commonly reported, with only 12% experiencing no bloating, while the rest

reported it at different frequencies. Abdominal pain was absent in 17% of subjects, while others experienced it ranging from short periods to all of the time. Drowsiness was reported occasionally by most participants, with 20% never experiencing it. Body pain was experienced by many, though 24.4% reported no pain. Shortness of breath was present in varying degrees, with only 18.8% reporting no symptoms. Itching was another frequent complaint, while a minority reported no itching. Decreased appetite was also commonly experienced, with only 17.7% reporting normal appetite. Difficulty in lifting objects was reported by many participants, although 28.8% had no difficulty.

Psychological concerns were also evident. Worry about dietary restrictions was common, while anxiety and unhappiness were experienced to varying extents. Depression was reported at different levels, though 18.8% did not experience any depressive symptoms. Problems with concentration were noted by most subjects, and many expressed worry about never feeling better. Concerns regarding liver transplantation were significant, with only 28.8% reporting no concern, while others expressed varying levels of worry. Overall, the results indicate that chronic liver disease considerably affects multiple aspects of health-related quality of life, including physical comfort, emotional wellbeing, and daily functioning.

Section 3: Association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables.

This section examines the association between health related quality of life among subjects with Chronic Liver Disease and selected demographic and clinical variables using the chi-square test at a significance level of $p < 0.05$. Since several cell values were less than 5, categories were combined for analysis. Quality of life scores were grouped into good/excellent and fair, and demographic variables such as age, education, marital status, employment, monthly income, and distance from hospital were regrouped to meet statistical requirements. The results showed a significant association between health related quality of life and monthly income, as the calculated chi-square value exceeded the critical value at the 0.05 level. However, no significant associations were found between quality of life and other demographic variables including age, gender, education, marital status, employment, place of living, and distance from hospital

Section 4: Association between health related quality of life among subjects with Chronic Liver disease and the selected clinical variables.

This section examines the association between health related quality of life among subjects with Chronic Liver Disease and selected clinical variables using the chi-square test at a significance level of $p < 0.05$. Since several cell values were less than 5, categories were combined for analysis. Quality of life was grouped into good/excellent and fair categories, and clinical variables such as duration of treatment, risk factors, number of drinks per week, and type of diet were regrouped to meet statistical requirements. The results showed a significant association between health related quality of life and clinical variables including blood in stool, dietary pattern, regular check-up, and nausea and vomiting, as the calculated chi-square values exceeded the critical value at the 0.05 level. However, no significant association was found between quality of life and other clinical variables such as duration of illness, risk factors, alcohol intake, dietary and fluid restrictions, family history, edema, changes in urine or eye color, appetite changes, and weight changes.

DISCUSSION

In this chapter findings of the study were discussed with other supportive studies. The findings were organised under the following headings

- Section 1: Sample description.
- Section 2: Health related quality of life among subjects with Chronic Liver disease.
- Section 3: Association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variables.
- Section 4: Association between health related quality of life among subjects with Chronic Liver disease and the selected clinical variables.

Section 1: Sample Description

In the present study, most (40%) of the subjects were in the age group of 46– 60 years, 31.1% were in the age group of 61 -75 years, 7.7% were in the age group of 76-90 years and 21.2% were in the age group of 31 – 45 years. Majority (78.8%) of the subjects were males and 21.1% of them were females. 48.8% of the subjects had secondary education, 24.4% had primary education, 20% were graduates, 6.6% were post graduates. majority (85.5%) of the subjects were married, 11.1% were single, 2.2% were widow and only 1.1% were separated. Most (7.7%) of the subjects were doing other jobs, 47.7% of them were private employees, 36.6% were daily wagers and 7.7% were government employees. The monthly income of 33.3% of the subjects were between Rs.10,001 to 30,000,20% had between Rs.30,001 to 50,000 and only 46.6% had income greater than Rs.50,001. majority (7.7%) of the subjects were villagers, 55.5% were living in municipality and 36.6% were living in corporation. 32.2% of subjects were residing at a distance greater than 20 km away from the hospital, 44.4% resided at a distance 16 – 20 km away from the hospital, 11.1% resided at a distance of 6 – 10 km and 11 – 15 km away from the hospital respectively and only 3.3% resided at a distance of less than 5 km from the hospital.

In the present study the duration of illness of 23.3 % of the subjects was less than 3 years, 34.4% had 4-6 years of duration of illness and the remaining 43.3 % reported of having greater than 6 years of duration of illness. About the risk factor of chronic liver disease majority (23.3%) of subjects had history of alcoholism, 4.4% had Hepatitis B, 22.2% had diabetes mellitus,0% had obesity, 1.1% had dyslipidemia, 1.1% had right sided heart failure,4.4% have unknown factors and 4.4% have other risk factors.most (12.2%) of the subjects had 7-14 alcoholic drinks per week, 7.7% had less than 7 drinks, 4.4% of alcoholic people drunk 15-21 drinks per week. 84.4% of subjects did not have any family history of liver disease and the remaining subjects (15.5%) had family history of liver disease. Majority (72.2%) of the subjects had fluid restriction and the remaining (27.7%) did not have any fluid restriction. Majority (85.6%) were on salt restriction and 14.4 % did not have any salt restriction. 28.8% of the subjects were on treatment for CLD for less than or equal to 1 year, 25.5% were on treatment for less than or equal to 3 years and others (45.5%) were under treatment for less than or equal to 6 years. 50% of subjects had yellowish discoloration on skin and eyes, 50% did not have yellowish discoloration. Majority (60%) of subjects had complaints of increase in abdominal size and 40% did not have the same. 74.4% of the subjects reported swelling in legs or ankles and 25.5% did not have swelling. majority (66.6%) of subjects did not have dark colored urine and remaining 33.3% had dark colored urine. Most (52.2%) of the subjects did not have dark colored stool and others (47.7%) had the same. 8.8% of subjects did not have nausea and vomiting and remaining 91.1% had nausea and vomiting. Most of the subjects (90%) had complaints of decrease in appetite and no normal appetite. majority (57.6%) of the subjects reported about taking protein rich foods in their regular diet, 9.9% had fat rich diet and remaining 13.5% had carbohydrate rich diet. Most (43.3%) of the subjects did not experienced weight loss and remaining 47.7 % had weight loss. 52.2% of the subjects did not experience weight gain whereas 47.7 % had weight gain. 91.1% of subjects did not experienced bleeding or bruising and only 8.8% had bleeding or bruising. Majority of the subjects (100%) followed a regular medical check up.

Section 2: Health related quality of life among patients with Chronic Liver Disease

In the present study the health related quality of life among patients with Chronic Liver Disease was assessed using standardised Chronic Liver Disease Questionnaire (CLDQ) developed by Z.M. Younossi on 100 patients, out of which 60% of the subjects had overall CLDQ score ranging from 102-152 which indicated good health related quality of life, another 26% of the subjects had an overall CLDQ score ranging from 51-101 which indicated fair health related quality of life, remaining 14% of the 87subjects had an overall CLDQ score of 153-203 which indicated excellent health related quality of life.

Section3: Association between health related quality of life among subjects with Chronic Liver disease and the selected demographic variable

The present study shows the association between health related quality of life among Chronic Liver disease patients and the selected demographic variables such as age in years ,gender ,education ,marital status, employment, income, and place of living were computed using chi square test at a significant level of p value lesser than 0.05.It was found that there was a significant association between health related quality of life among chronic liver disease patients and monthly income (p= 0.04)

Section 4: Association between health related quality of life among subjects with Chronic Liver disease and the selected clinical variables.

The present study shows the association between health related quality of life among Chronic Liver disease patients and selected clinical variables such as duration of illness, risk factors, alcoholism, diet, regular follow-up, oedema, ascites, bloody stool, nausea, dietary pattern and vomiting. Which were computed using chi square test at a significant level of p value lesser than 0.05. It was found that there was a significant association between clinical variables such as bloody stool ($p=.001$), nausea and vomiting($p=.044$), dietary pattern ($p=.001$), and regular checkups($p=.047$) and health related quality of life.

CHAPTER-3

LIMITATIONS

It comprised of diverse group of patients belonging to a wide range of age group ranging from 30 years to 90 years hence it may have affected the overall results of the study as the sample population is heterogenous in nature.

· Generalisation of the study should be done with caution as the sample

SCOPE OF THE STUDY

The findings of the present study have implications for nursing education, nursing research, nursing practice and nursing administration and public health.

Nursing administration

Nursing administrators should take initiative in creating policies and plans in assessing the health related quality of life among patients with Chronic Liver Disease and in providing education regarding self care management of Chronic Liver Disease to patients during their hospital stay and also during their hospital visits and thus improving their quality of life. Hospital should develop a central health education cell where self learning materials, leaflets, pamphlets and health education materials are available for catering the public and patients about chronic liver disease. The nurse administrator should provide special training to the nurses in providing health education to patients who are diagnosed with Chronic Liver Disease according to the need of clients through various methods like continuing education programme. The nurse administrator should ensure that all nursing staff should be actively involved in health education programme.

Nursing practice

Nurses can assess the CLD patients with regard to specific domains so that general quality care can be improved. Health education is an important tool of health care delivery system. From the present study it was found that most of the Chronic Liver Disease patients had good health related quality of life the quality of life can be improved by individual teaching programs. The investigators felt that nurses should start health education about self care management of Chronic Liver Disease from the time of diagnosis and continue throughout each visit.

Nursing education

Nursing personnels working in health care setting should participate CLD related seminars, group discussions, conferences and workshops so they can get the additional knowledge and skill about it. Nursing personnels working in health care setting should provide education on home care management of Chronic Liver Disease. Students can conduct educational programmes for caregivers in hospital setting and to patients during their nursing practice. Nursing curriculum should include content on self care management of Chronic Liver Disease. The nursing education should give more importance to the application of theory into practice.

Nursing research

One of the most important aims of nursing research is to contribute knowledge to the body of nursing and to expand the scope of nursing. Various studies have been conducted by nurses from developed countries in helping to improve the quality of life of chronic liver disease patients. In Indian setting very few research studies have been conducted in this area. Therefore nurses should take initiative to conduct research studies to assess the health related quality of life among patients with Chronic Liver Disease and studies to increase the knowledge and practice of clients who are diagnosed with Chronic Liver Disease to improve their quality of life and prevent complications.

Public health

The findings of the present study throws a light on the importance of information, education, and communication programmes to improve quality of life of patients diagnosed with Chronic Liver Disease. The community health nurses should take initiatives in organising health education programmes in community setting and also in public places regarding self care management of Chronic Liver Disease and also the various measures to prevent Chronic Liver Disease through life style modification.

CHAPTER 4

CONCLUSION

Chronic Liver Disease is a continuous process of inflammation, destruction, and regeneration of liver parenchyma, which leads to fibrosis and cirrhosis. Chronic liver disease (CLD) and cirrhosis account for 2 million deaths worldwide each year. Globally, 1.5 billion persons had CLD in 2017. The health related quality of life is a broad concept which reflects the perception of patients on how the effects of disease and treatment impact on their mental well-being, physical health, functional status, social relationships and personal beliefs which is measured by Chronic Liver Disease Questionnaire (CLDQ).

· Most (40%) of the subjects were in the age group of 46 – 60 years, 31.1% were in the age group of 61 -75 years, 7.7% were in the age group of 76-90 years and 21.2% were in the age group of 31 – 45 years. Majority (78.8%) of the subjects were males and 21.1% of them were females. 48.8% of the subjects had secondary education, 24.4% had primary education, 20% were graduates, 6.6% were post graduates and 0% were illiterate. majority (85.5%) of the subjects were married, 11.1% were single, 2.2% were widow and only 1.1% were separated. Most (7.7%) of the subjects were doing other jobs, 47.7% of them were private employees, 36.6% were daily wagers and 7.7% were government employees. The monthly income of 33.3% of the subjects were between Rs.10,001 to 30,000, 20% had between Rs.30,001 to 50,000 and only 46.6% had income greater than Rs.50,001. majority (7.7%) of the subjects were villagers, 55.5% were living in municipality and 36.6% were living in corporation. 32.2% of subjects were residing at a distance greater than 20 km away from the hospital, 44.4% resided at a distance 16 – 20 km away from the hospital, 11.1% resided at a distance of 6 – 10 km and 11 – 15 km away from the hospital respectively and only 3.3% resided at a distance of less than 5 km from the hospital.. the duration of illness of 23.3 % of the subjects was less than 3 years, 34.4% had 4-6 years of duration of illness and the remaining 43.3 % reported of having greater than 6 years of duration of illness. About the risk factor of chronic liver disease majority (23.3%) of subjects had history of alcoholism, 4.4% had Hepatitis B, 22.2% had diabetes mellitus, 1.1% had dyslipidemia, 1.1% had right sided heart failure, 4.4% have unknown factors and 4.4% have other risk factors. most (12.2%) of the subjects had 7-14 alcoholic drinks per week, 7.7% had less than 7 drinks, 4.4% of alcoholic people drunk 15-21 drinks per week. 84.4% of subjects did not have any family history of liver disease and the remaining subjects (15.5%) had family history of liver disease. Majority (72.2%) of the subjects had fluid restriction and the remaining (27.7%) did not have any fluid restriction. Majority (85.6%) were on salt restriction and 14.4 % did not have any salt restriction. 28.8% of the subjects were on treatment for CLD for less than or equal to 1 year, 25.5% were on treatment for less than or equal to 3 years and others (45.5%) were under treatment for less than or equal to 6 years. 50% of subjects had yellowish discoloration on skin and eyes, 50% did not have yellowish discoloration. Majority (60%) of subjects had complaints of increase in abdominal size and 40% did not have the same. 74.4% of the subjects reported swelling in legs or ankles and 25.5% did not have swelling. majority (66.6%) of subjects did not have dark colored urine and remaining 33.3% had dark colored urine. Most (52.2%) of the subjects did not have dark colored stool and others (47.7%) had the same. 8.8% of subjects did not have nausea and vomiting

and remaining 91.1% had nausea and vomiting. Most of the subjects (90%) had complaints of decrease in appetite and no normal appetite. majority (57.6%) of the subjects reported about taking protein rich foods in their regular diet, 9.9% had fat rich diet and remaining 13.5% had carbohydrate rich diet. Most (43.3%) of the subjects did not experienced weight loss and remaining 47.7 % had weight loss. 52.2% of the subjects did not experience weight gain whereas 47.7 % had weight gain. 91.1% of subjects did not experienced bleeding or bruising and only 8.8% had bleeding or bruising. Majority of the subjects (100%) followed a regular medical check up

· The major findings of health related quality of life among patients with chronic liver disease shows that out of 100 subjects 60% of the subjects had good health related quality of life, another 26% of the subjects had fair health related quality of life, remaining 14% of the subjects had excellent health related quality of life. There was no one with poor health related quality of life. While assessing the various domains of health related quality of life it shows that in the abdominal domain the abdominal bloating was the most commonly experienced symptom among the subjects meanwhile in the fatigue domain, fatigue was the most commonly experienced symptom by the subjects. From the domain of systemic symptoms the most commonly experienced symptom was body pain. In the activity domain, majority of subjects had difficulty in lifting objects. In the domain emotional function, majority of the subjects experienced difficulty in sleeping, in the worry domain most of the subjects were worried about the impact of liver disease on family and about the symptoms developing into a major problem.

· Association between health related quality of life among subjects with Chronic Liver Disease and selected demographic variables shows that calculated p value(p-value-0.0477)for monthly income was less than 0.05 level of significance. Hence null hypothesis (H01) was partially rejected and inferred that there was significant association between health related quality of life and monthly income. Whereas no significant association were found between health related quality of life and other demographic variables such as age in years, gender, education, marital status, employment, place of living and distance from hospital as the calculated p value is greater than 0.05 level of significance.

· Association between health related quality of life among subjects with Chronic Liver Disease and selected clinical variables shows that the calculated p value for blood in stool(p value -0.0010), dietary pattern(p value - 0.0011), regular checkup (p value-0.4778), nausea and vomiting(p value-0.0442) was less than 0.05 level of significance. Hence the null hypothesis was partially rejected and inferred that there was significant association between health related quality of life and clinical variables such as blood in stool, dietary pattern and regular checkup, nausea and vomiting. Whereas no significant association found between health related quality of life and other clinical variables such as duration of illness, risk factors, number of drinks, water restriction, salt restriction, duration of treatment, yellowish discolouration of eye, family history of illness, edema in legs, change in urine colour, nausea and vomiting, decreased appetite, decrease in weight and increase in weight as the calculated p value is greater than 0.05 level of significance.

CHAPTER 5

SUMMARY

The present study was undertaken to assess the health related quality of life among patients diagnosed with Chronic Liver Disease in a selected hospital at Calicut district. The independent variable is health related quality of life among patients with Chronic Liver Disease and demographic variables were age, gender, education, marital status, occupation, monthly income, place of living, distance from resident area to hospital and the clinical variables were duration of illness, risk factors of liver disease, number of alcoholic drinks per week, family history of liver disease, fluid restriction, salt restriction, duration of treatment, skin and mucosal colour changes, changes in abdominal size, swelling on legs and ankles, dark coloured urine, pale or bloody coloured stool, nausea, vomiting, loss of appetite, weight loss and gain, easy bleeding or bruising, regular check up. Review of literature was on the headings such as Chronic Liver Disease and factors determining health related quality of life among patients with Chronic Liver Disease. Quantitative research approach with non experimental descriptive research design was used in the present study. The study was conducted in the in-patient and out patient departments of ASTER MIMS Hospital, Calicut. Sampling technique used was convenience sampling. The sample consisted of 90 patients with chronic liver

disease who were willing to participate. The tool used for this study were a structured questionnaire containing demographic and clinical variables and a standardised Chronic Liver Disease Questionnaire (CLDQ) developed by the author Z.M. Yuonossi to evaluate the impact of chronic liver disease on quality of life. Content validity was selected in order to validate the adequacy of the tool. The prepared tool along with the objectives, operational definitions was submitted to 5 experts of ASTER MIMS College of Nursing, Malappuram after seeking the permission in validating the tool. The I-CVI values of 7 questions of demographic questionnaire were 1 and one question had an I-CVI value of 0.83, and in clinical variable questionnaire 14 questions had I-CVI value equal to 1 and 5 questions had an I-CVI equal to 0.83. Tool 2 which was The chronic liver disease questionnaire is a standardised tool developed by Z.M. Younnosi. It consist of 29 items. The tool has good structural and construct validity. Reliability of tool was checked by test retest method and it was found that reliability of tool 1 section A was 100% and for section B 94.72 % and the reliability for tool 2 a standardised Chronic Liver Disease Questionnaire (CLDQ) was calculated using formula of Karl Pearson's correlation coefficient. The correlation coefficient of tool 2 was $r = 0.99$ which was found to be reliable. The pilot study was conducted among ten patients with chronic liver disease in the inpatient and outpatient departments of ASTER MIMS Hospital, Calicut on 28/05/2025, and the subjects were selected based on inclusion criteria. Convenience sampling technique was used. A written permission from the Director of the selected hospital and HOD of Gastroenterology department was obtained. Informed consent was obtained and confidentiality was maintained. Data were collected and analysed using descriptive statistics tool was found to be reliable and the study was found to be feasible. The main study was conducted on 02/06/2025 to 07/06/2025 selecting 90 samples from both the inpatient and outpatient departments of ASTER MIMS Hospital, Calicut. The major findings revealed that out of 90 subjects 52.2% of the subjects had good health related quality of life, another 13.5% of the subjects had fair health related quality of life, remaining 15.3% of the subjects had excellent health related quality of life. There was no one with poor health related quality of life. The major findings in the demographic data shows that, most (40%) of the subjects were in the age group of 46 – 60 years, 31.1% were in the age group of 61 - 75 years, 7.7% were in the age group of 76-90 years and 21.2% were in the age group of 31 – 45 years. Majority (78.8%) of the subjects were males and 21.1% of them were females. 48.8% of the subjects had secondary education, 24.4% had primary education, 20% were graduates, 6.6% were post graduates. majority (85.5%) of the subjects were married, 11.1% were single, 2.2% were widow and only 1.1% were separated. Most (7.7%) of the subjects were doing other jobs, 47.7% of them were private employees, 36.6% were daily wagers and 7.7% were government employees. The monthly income of 33.3% of the subjects were between Rs.10,001 to 30,000, 20% had between Rs.30,001 to 50,000 and only 46.6% had income greater than Rs.50,001. majority (7.7%) of the subjects were villagers, 55.5% were living in municipality and 36.6% were living in corporation. 32.2% of subjects were residing at a distance greater than 20 km away from the hospital, 44.4% resided at a distance 16 – 20 km away from the hospital, 11.1% resided at a distance of 6 – 10 km and 11 – 15 km away from the hospital respectively and only 3.3% resided at a distance of less than 5 km from the hospital. the duration of illness of 23.3 % of the subjects was less than 3 years, 34.4% had 4-6 years of duration of illness and the remaining 43.3 % reported of having greater than 6 years of duration of illness. About the risk factor of chronic liver disease majority (23.3%) of subjects had history of alcoholism, 4.4% had Hepatitis B, 22.2% had diabetes mellitus, 1.1% had dyslipidemia, 1.1% had right sided heart failure, 4.4% have unknown factors and 4.4% have other risk factors. most (12.2%) of the subjects had 7-14 alcoholic drinks per week, 7.7% had less than 7 drinks, 4.4% of alcoholic people drunk 15-21 drinks per week. 84.4% of subjects did not have any family history of liver disease and the remaining subjects (15.5%) had family history of liver disease. Majority (72.2%) of the subjects had fluid restriction and the remaining (27.7%) did not have any fluid restriction. Majority (85.6%) were on salt restriction and 14.4 % did not have any salt restriction. 28.8% of the subjects were on treatment for CLD for less than or equal to 1 year, 25.5% were on treatment for less than or equal to 3 years and others (45.5%) were under treatment for less than or equal to 6 years. 50% of subjects had yellowish discoloration on skin and eyes, 50% did not have yellowish discoloration. Majority (60%) of subjects had complaints of increase in abdominal size and 40% did not have the same. 74.4% of the subjects reported swelling in legs or ankles and 25.5% did not have swelling. majority (66.6%) of subjects did not have dark colored urine and remaining 33.3% had dark colored urine. Most (52.2%) of the subjects did not have dark colored stool and others (47.7%) had the same. 8.8% of subjects did not have nausea and vomiting and remaining 91.1% had nausea and vomiting. 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not experience weight gain whereas 47.7 % had weight gain. 91.1% of subjects did not experienced bleeding or bruising and only 8.8% had bleeding or bruising. Majority of the subjects (100%) followed a regular medical check up.

The result of the study in association between health related quality of life among subjects with Chronic Liver Disease and selected demographic variables shows that calculated p value for monthly income was less than 0.05 level of significance. Hence null hypothesis was partially rejected and inferred that there was significant association between health related quality of life and monthly income. Whereas no significant association were found between health related quality of life and other demographic variables such as age in years, gender, education, marital status, employment, place of living and distance from hospital as the calculated p value is greater than 0.05 level of significance. 98The results of the study in association between health related quality of life among subjects with Chronic Liver Disease and selected clinical variables shows that the calculated p value for blood in stool, dietary pattern, regular checkup, nausea and vomiting was less than 0.05 level of significance. Hence the null hypothesis was partially rejected and inferred that there was significant association between health related quality of life and clinical variables such as blood in stool, dietary pattern and regular checkup, nausea and vomiting .Whereas no significant association found between health related quality of life and other clinical variables such as duration of illness, risk factors, number of drinks, water restriction, salt restriction, duration of treatment, yellowish discolouration of eye, family history of illness, edema in legs, change in urine colour, nausea and vomiting, decreased appetite, decrease in weight and increase in weight as the calculated p value is greater than 0.05 level of significance.

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APPENDIX A

LIST OF ABBREVIATIONS

MIMS : Malabar Institute of Medical Science

BSc(N): Bachelor of Science in Nursing

MSc(N): Master of Science in Nursing

MBA(HM): Master of Business Administration in Hospital Management

Ph. D(N): Doctor of Philosophy in Nursing

WHO: World Health Organization

CLD: Chronic Liver Disease

ALD: Acute Liver Disease



IP: Inpatient

OPD: Out Patient Department

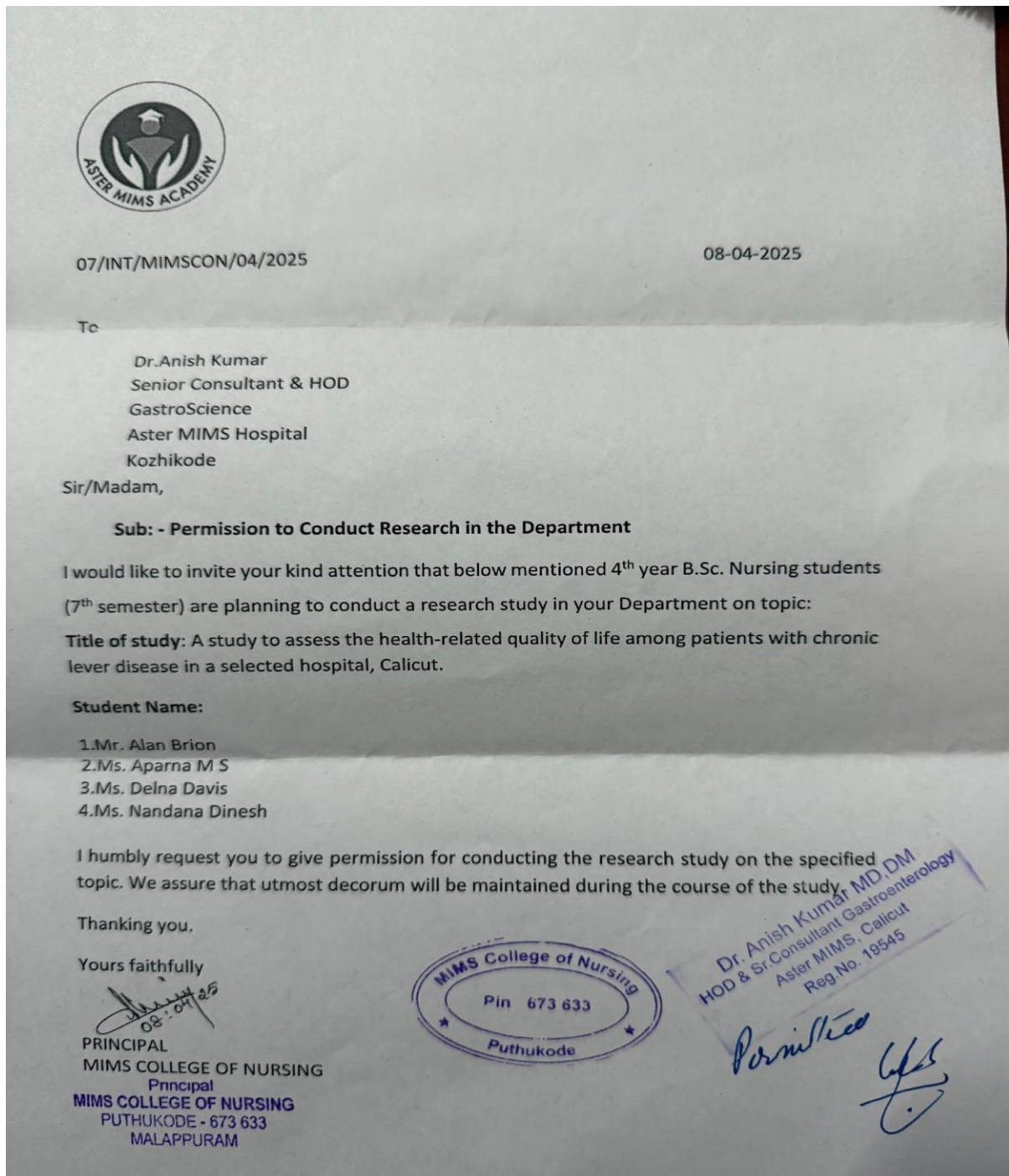
NABH: National Accreditation Board for Hospitals

APPENDIX B

PERMISSION LETTER FROM IEC

Aster MIMS HOSPITAL We'll Treat You Well	INSTITUTIONAL ETHICS COMMITTEE MALABAR INSTITUTE OF MEDICAL SCIENCES LTD. (MIMS) IEC Reg. No: EC/NEW/INST/2022/KL/0056 & ECR/301/Inst/KL/2013/RR-24
<u>Communication of Decision of the Institutional Ethics Committee (IEC)</u>	
Protocol Title: A study to assess the health related quality of life among patients diagnosed with chronic liver disease in selected hospital, Calicut.	
IEC Ref No. : 101/25	
Investigators: Ms. Delna Davis, Ms. Nandana Dinesh, Ms. Aparna M S, Mr. Alan Brion K P BSc. Nursing candidates, MIMS College of Nursing	
<input checked="" type="checkbox"/> New review <input type="checkbox"/> Revised review <input type="checkbox"/> Expedited review	
Date of review (D/M/Y): 19.07.2025	
Date of previous review, if revised application:	
Decision of the IEC/ IRB:	
<input checked="" type="checkbox"/> Recommended <input type="checkbox"/> Recommended with suggestions <input type="checkbox"/> Revision <input type="checkbox"/> Rejected	
Suggestions/ Reasons/ Remarks:	
Recommended for a period of one month with a sample size of 90.	
<p>Please note</p> <ul style="list-style-type: none"> - Inform IEC immediately in case of any Adverse events and Serious adverse events. - Inform IEC in case of any change of study procedure, site and investigator. - This permission is only for the period mentioned above. Annual report to be submitted to IEC. - Members of IEC have the right to monitor the study with prior intimation. 	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div data-bbox="395 1758 523 1854">  </div> <div data-bbox="352 1861 584 1921"> <p>Dr. Anand M R Member Secretary, IEC</p> </div> <div data-bbox="727 1883 922 2078">  </div> </div>	

APPENDIX C
PERMISSION LETTER TO CONDUCT RESEARCH IN GASTROENTEROLOGY DEPARTMENT



APPENDIX D

REQUEST FOR VALIDATION OF RESEARCH TOOL

From,

Mr Alan Brion

Ms Aparna MS

Ms Delna Davis

Ms Nandana Dinesh

7th semester BSc Nursing

MIMS College Of Nursing, Puthukode

To,

Subject: Request for opinion and suggestion for establishing content validity of tool.

Respected madam,

We are 7th semester B.Sc. nursing students of MIMS College of Nursing, Puthukode. For the practical fulfillment of course, we need to undertake a research project and the problem statement of the selected research topic “A study to assess the health related quality of life among patients with chronic liver disease in a selected hospital, Kozhikode

” We kindly request you to go through the content of tool and validate in terms of the relevance, appropriateness and accuracy. I also request you to give your valuable suggestion which will enable us to establish the content validity of tool.

Thanking you,

Yours sincerely

Mr Alan Brion Ms Aparna MS

Ms Delna Davis

Ms Nandana Dinesh

Enclosed:

1.proposal of the study

2.Tool

Place: Puthukode

Date:

APPENDIX E**CERTIFICATE OF CONTENT VALIDITY**

Certificate of content validity of data collection tool, "A study to assess the health related quality of life among patients diagnosed with chronic liver disease in a selected hospital, Calicut". This is to certify that the tool for assess the health related quality of life among patients with Chronic Liver Disease and find the association between the health related quality of life among Chronic Liver Disease patients with selected demographic variables and clinical variables, prepared by Mr. Alan brion, Ms Aparna M S, Ms Delna davis, Ms Nandana Dinesh, seventh semester BSc Nursing students, Mims college of nursing to be used in the study has been validated by meant can be used for data collection.

Suggestion:

Adequacy of tool:

Organization of tool:

Feasibility of tool:

Validation Details

Signature:

Name:

APPENDIX F**LIST OF EXPERTS WHO VALIDATED THE TOOL**

SL.NO	NAME AND DESIGNATION OF EXPERTS
1.	Prof. Isha S Vice principal, Department of obstetrics and gynecology Nursing, MIMS College of Nursing
2.	Ms. Rakhi Seban Professor, Department of obstetrics and gynecology Nursing, MIMS

College of Nursing

3. Ms. Mary Elizabeth Tidiya
Associate professor, Department of Medical Surgical Nursing, MIMS College of Nursing
4. Ms. Jipsa k
Associate Professor, Department of Community Health Nursing, MIMS College of Nursing
5. Ms. Nikhina P
Assistant Professor, Department of Medical Surgical Nursing, MIMS College of Nursing

APPENDIX G

PARTICIPANT INFORMANT SHEET

SECTION A – BASIC INFORMATION

1. Administrative Details

(a) Name of Organisation: **MIMS College of nursing**

(b) Name of Ethics Committee: **IEC, Aster MIMS Hospital**

(c) Name of the candidate: **Mr.Alan Brion, Ms.Aparna M S, Ms.Delna Davis, and Ms.Nandana Dinesh**

Designation: **7th semester BSc Nursing**

(d) Department/Division: (e) Date of submission:

(f) Type of review requested

Exemption from review Expedited review **Full committee review**

(g) Title of the study: **A study to assess the health related quality of life among patients diagnosed with chronic liver disease in a selected hospital, Calicut.**

Acronym/ Short title, (If any):

(h) Protocol number (If any): Version number:

(i) Details of Investigators:

Name	Designation	Department and	Address for
------	-------------	----------------	-------------

	and Qualification	Institution	Communication
Student researcher			
Mr.Alan Brion Ms. Aparna M S Ms. Delna Davis Ms. Nandana Dinesh	7 th semester Bsc Nursing	MIMS College of Nursing	MIMS College Of Nursing, Puthukode (Po) Vazhayoor, Malappuram Ph:04832832992
Principal investigator			
Ms. Silpa M K	Senior Lecturer	Dept. of Medical Surgical Nursing MIMS College Of Nursing	MIMS College Of Nursing, Puthukode (Po) Vazhayoor, Malappuram Ph:04832832992
Co- investigator if any	NA		

(j) Number of studies where applicant is a :

- (i) Principal Investigator at time of submission: **Nil**
(ii) (ii) Co- Investigator at time of submission: **NA**

(k) Duration of the study : **1 month**

2. Funding Details And Budget.

(a) Total estimated budget for site :

At site: **5000/-**

In India: Globally:

(b) **Self – funding** Institutional funding Funding agency (specify)

SECTION B – RESEARCH RELATED INFORMATION

3. Overview of Research

(a) Lay summary (within 300 words) :

Present study is a descriptive study to assess the quality of life among patients diagnosed with chronic liver disease in a selected hospital, Calicut. 80 patients with chronic liver disease who meet the inclusion and exclusion criteria will be selected using purposive sampling technique. After obtaining the informed consent, validated tool will be sent given as questionnaire after which the data will be analyzed using descriptive and inferential statistics.

(b) Type of study :

Basic Sciences	Clinical	Cross Sectional
Retrospective.	Epidemiological.	Case Control
Prospective	Public Health	Cohort
Qualitative	Socio- behavioural	Systematic Review
Quantitative	Biological samples/ Date	
Mixed Method	Any others (specify)	

4. Methodology

(a) Sample size/ number of participants (as applicable) :

At site: 90 In India Globally
Control group Study group

Justification for the sample size chosen (100 words); In case of qualitative study, mention the criteria used for saturation

(b) Is there an external laboratory/ outsourcing involved for investigation? Yes **No**

(c) How was the scientific quality of the study assessed ?

Independent external review Review by sponsor/ Funder **Review within PI's Institution.**
Review within multi-centre No review

Date of Review :

Comments of scientific committee, if any (100 words) :

SECTION C: PARTICIPANT RELATED INFORMATION

5. Recruitment And Research Participants

(a) Type of participants in the study :

Health volunteers **Patients** Vulnerable persons/ Special groups

Others (specify)

Who will do the recruitment ? : **Investigators**

Participant recruitment method used :

Posters/ leaflets/Letters TV/Radio ads/ Social media/ Institution website

Patients/ Family / Friends visiting hospitals

Telephone Others (specify): **Demographic questionnaire and Chronic Liver Disease Questionnaire**

(b) i. Will there be vulnerable persons/ special groups involved ? Yes **No** NA

ii. If yes, type of vulnerable persons/ special groups

Children under 18 yrs Pregnant or lactating women

Differently abled (Mental/ Physical) Employee/ Students/ Nurses/ Staff

Elderly Institutionalized

Economically and socially disadvantaged. Refugees/ Migrants/ Homeless

Terminally ill (stigmatized or rare diseases)

Any other (Specify) :

iii. Provide justification for inclusion/exclusion : Inclusion and Exclusion based on specific Eligibility criteria (attached in Proposal)

iv. Are there any additional safeguards to protect research participants? : NA

(c) Is there any reimbursement to the participants ? Yes **No** NA

If yes, Monetary Non- monetary Provide details

(d) Are there any incentives to the participants ? Yes **No** NA

If yes, Monetary Non- monetary Provide details

(e) Are there any participant recruitment fee/ incentives for the study provided to the PI/ Institution ?
Yes **No** NA

If yes, Monetary Non- monetary Provide details

6. Benefits And Risks

(a). i. Are there any anticipated physical/ social/ psychological discomforts/ risk to participants?

Yes **No**

If yes, categorize the level of risk:

Less than Minimal risk Minimal risk

Minor increase over minimal risk or low More than minimal risk or high risk

ii. Describe the risk management strategy : NA

(b) What are the potential benefits from the study? **Yes** No If yes Direct Indirect

For participant: **Can modify the quality of life**

For the society/ community : **Others are able to give support in all aspects of care**

For improvement in science: **Nursing care can be planned by assessing quality of life of patients with chronic liver disease.**

Please describe how the benefits justify the risks : Benefits outweigh the risks involved

(c) Are adverse events expected in the study ? Yes **No** NA

If Yes (specify) :

7. Informed Consent

(a). Are you seeking waiver of consent? : **Yes** No

If yes, please specify reasons and skip to item no.8

(b) Version number and date of Participant Information Sheet (PIS) :

Version number and date of Informed Consent Form (ICF) :

(c) Type of consent planned for :

Signed consent Verbal/Oral consent Witnessed consent

Audio- Video consent (AV)

Consent from LAR (If so, specify from whom)

For children <7 yrs parental/ LAR consent

Verbal assent from minor (7-12 yrs) along with parental consent

Written assent from minor(13-18 yrs) along with parental consent

Other (specify) :

(d) Who will obtain the informed consent?

PI/Co-I Nurse/Counselor Research staff other (specify) :

Any tools to be used :

(e) Participant Information Sheet (PIS) and Informed Consent Form (ICF) :

English **Local Language** Other (specify):

List the languages in which translations were done : Malayalam

If translation has not been done, please justify :

(f) Elements contained in the Participant Information Sheet (PIS) and Informed Consent Form ICF): **Yes**
Added

Simple language Data/sample size Compensation for study related injury

Risks and discomforts Need to recontact Statement that consent is voluntary

Alternatives to participation. Confidentiality Commercialization/Benefit sharing

Right to withdraw Storage of samples. Statement that study involves research Benefits.

Return of research results Use of photographs/ Identifying data

Purpose and procedure Payment for participation Contact information of PI and Member Secretary of EC

Other (Specify):

8. Payment/ Compensation

(a) Who will bear the costs related to participation and procedures ?

PI Institution Sponsor Other agencies (specify):

(b) Is there a provision for free treatment of research related injuries? Yes **No** NA

If yes, then who will provide the treatment?

(c) Is there a provision for compensation of research related SAE? Yes **No** N/A

If yes, specify.

Sponsor Institutional/Corpus fund Project grant Insurance

d) Is there any provision for medical treatment or management till the relatedness is determined for injury to the participants during the study period? Yes **No**

N/A

If yes, specify :

(e) Is there a provision for ancillary care for unrelated illness during the study period?

.Yes **No** N/A If yes, please specify

9. Storage And Confidentiality :

(a) Identifying Information: Study Involves samples/data. Yes No N/A

If Yes, specify :

Anonymous/Unidentified

Anonymized: Reversibly coded

Irreversibly coded

Identifiable

If identifiers must be retained, what additional precautions will be taken to ensure that access is limited /data is safeguarded? (e.g. data stored in a cabinet, password protected computer etc.) :

(b) Who will be maintaining the data pertaining to the study? : **The student researchers**

(c) Where will the data be analyzed and by whom? : **The student researchers**

(d) For how long will the data be stored? **6 months**

(e) Do you propose to use stored samples/ data in future studies? Yes No Maybe

If yes, explain how you might use stored materila/data in the future ? **Maybe**

APPENDIX H

INFORMED CONSENT

Dear Respondents,

We, 7 th Semester BSc. Nursing students of MIMS College of Nursing has undertaken a research study on “ A study to assess the health related quality of life among patients diagnosed with chronic liver disease in a selected hospital, Calicut. ” for the partial fulfilment of Bachelor of Science in Nursing, we have prepared a demographic questionnaire, clinical variable questionnaire, and also used Malayalam version of standardised Chronic Liver Disease questionnaire. Kindly complete the demographic questionnaire, clinical variable questionnaire, and Malayalam version of standardised Chronic Liver Disease questionnaire. We assure you that the information obtained from you will be kept strictly confidential and will be used only for the study purpose .

Name:

Signature:

CONSENT

The above said details have been explained to me by the investigators. I understand that the information obtained from me will be used for the project work and I agree to participate in this project.

Designation:

DATA COLLECTION TOOLS

TOOL I

SECTION A:DEMOGRAPHIC DATA

INSTRUCTIONS:

1.Kindly read the instructions carefully.

2. Answer all the questions
3. Choose your correct option.
4. Put a tick()mark in appropriate boxes along side

1. Age in years:

- a. 31 -45 years
- b. 46 -60 years
- c. 61 -75 years
- d. 76 -90 years

2. Gender:

- a. Female
- b. Male
- c. Transgender

3. Education:

- a. Primary Education (< 8th standard)
- b. Secondary Education(8th - 12th standard)
- c. Graduate
- d. Postgraduate
- e. Illiterate

5. Marital status:

- a. Single
- b. Married
- c. Separated
- d. Widow
- e. Widower

6. Occupation:

- a. Government employee
- b. Private employee
- c. Daily Wages
- d. Others

7. Monthly Income:

- a. <10,000 Rupees
- b. 10,001- 30,000 Rupees
- c. 30,001-50,000 Rupees
- d. >50,000 Rupees

8.Place of Living:

- a. Village
- b. Municipality
- c. Corporation

9.Distance from resident area to hospita

- a. < 5Km
- b. 6 – 10Km
- c. 11– 15Km
- d. 16- 20Km
- e. >20 Km

SECTION -B

CLINICAL VARIABLES

1.Duration of illness:

- a. \leq 3 years
- b. 4 – 6 years
- c. > 6 years

2.Any known risk factors of chronic liver disease?

- a. Hepatitis B
- b. Hepatitis C
- c. Alcoholism
- d. Obesity
- e. Biliary cirrhosis
- f. Diabetes mellitus
- g. Dyslipidemia
- h. Haemochromatosis
- i. Wilsons disease
- j. Autoimmune hepatitis
- k. Family History of liver diseases
- l. Right Sided Heart Failure
- m. Unknown factors
- n. Others, specify risk factors

3.If you are an alcoholic number of drinks per week?

- a. Less than 7 drinks
- b. 7 to 14 drinks
- c. 14 to 21 drinks
- d. More than 21 drinks

Specify the type of alcoholic drink you use commonly.....

4.Any known family history of liver diseases?

- a. Yes
- b. No

If yes, specify the disease

5.Do you have fluid restriction?

- a. Yes
- b. No

If yes, specify amount of fluid per day

6. Do you have salt restriction?

- a. Yes
- b. No

If yes, specify how much grams.....

7. How long you have been on treatment?

- a. ≤ 1 year
- b. ≤ 3 years
- c. ≤ 6 years

8. Is your skin and eye yellowish in colour?

- a. Yes
- b. No

If yes, how long

9. Have you felt any increase in abdominal size?

- a. Present
- b. Absent

10. Do you have swelling in the legs and ankles?

- a. Present
- b. Absent

11. Does your urine appears dark in colour ?

- a. Present
- b. Absent

12. Do you have dark or bloody coloured stool?

- a. Present
- b. Absent

13. Do you have any complaints of nausea & vomiting?

- a. Present
-

b. Absent

14. Is there any decrease in appetite?

a. Present

b. Absent

15. What type of foods you include more in your diet?

a. Protein rich foods

(egg, fish, chicken, milk and milk products, legumes)

b. Fat rich foods.

(fried foods, fast foods, red meat, cheese, desserts)

c. Carbohydrate rich foods

(rice, oats, bread, potato, cereals)

16. Do you have weight loss?

a. Present

b. Absent

If present, how much

17. Do you have weight gain?

a. Present

b. Absent

If present, how much

18. Do you have bleeding or bruising:

a. Present

b. Absent

19. Are you following your regular checkup?

a. Yes

b. No

TOOL 2

THE CHRONIC LIVER DISEASE QUESTIONNAIRE (CLDQ)

This questionnaire is designed to find out how you have been feeling during the last two weeks. You will be asked about your symptoms related to your liver disease, how you have been affected in doing activities, and how your mood has been. Please complete all of the questions and select only one response for each question.

	Items	None of the time	Hardly any of the time	A little of the time	Some of the time	A good bit of the time	Most of the time	All of the time
1	How much of the time during the last two weeks have you been troubled by a feeling of abdominal bloating?							
2	How much of the time have you been tired or fatigued during the last two weeks?							
3	How much of the time during the last two weeks have you experienced bodily pain?							
4	How often during the last two weeks have you felt sleepy during the day?							

5	How much of the time during the last two weeks have you experienced abdominal pain?							
6	How much of the time during the last two weeks has shortness of breath been a problem for you in your daily activities?							
7	How much of the time during the last two weeks have you not been able to eat as much as you would like?							
8	How much of the time in the last two weeks have you been bothered by having decreased strength?							
9	How often during last 2 weeks have you had trouble lifting or carrying heavy objects?							
10	How often during the last two weeks have you felt anxious?							
11	How often during the last 2 weeks have you felt a decreased level of energy?							

12	How much of the time during the last two weeks have you felt unhappy?							
13	How often during the last two weeks have you felt drowsy?							
14	How much of the time during the last two weeks have you been bothered by limitation of your diet?							
15	How often during the last two weeks have you been irritable?							
16	How much of the time during the last two weeks have you had difficulty sleeping at night?							
17	How much of the time during the last two weeks have you been troubled by a feeling of abdominal discomfort?							
18	How much of the time during the last two weeks have you been worried about the impact your liver disease has on your family?							

19	How much of the time during the last two weeks have you had mood swings?							
20	How much of the time during the last two weeks have you been unable to fall asleep at night?							
21	How often during the last two weeks have you had muscle cramps?							
22	How much of the time during the last two weeks have you been worried that your symptoms will develop into major problems?							
23	How much of the time during the last two weeks have you had a dry mouth?							

24	How much of the time during the last two weeks have you felt depressed?							
25	How much of the time during the last two weeks have you been worried about your condition getting worse?							

26	How much of the time during the last two weeks have you had problems concentrating?							
27	How much of the time have you been troubled by itching during the last two weeks?							
28	How much of the time during the last two weeks have you been worried about never feeling any better?							
29	How much of the time during the last two weeks have you been concerned about availability of liver if you need a liver transplant?							

Scoring and interpretation

Total score range: 1 -203

All of the time: 1 -29

Most of the time: 30-58

A good bit of the time: 59 - 87

Some of the time: 88 - 116

A little of the time: 117-145

Hardly any of the time: 146-174

None of the time: 175-203

Key

Total score range:1 -7

None of the time:7

Hardly any of the time:6

A little of the time:5

Some of the time:4

A good bit of the time:3

Most of the time:2

All of the time:1

Grading of the quality of life:

Poor-0 -50

Fair-51-101

Good-102-152

Excellent-153-203

ഉപകരണം 1

ിഭോഗം-എ: ടെവമോത്ഗോഫിക്െോറ്റ

നർുേശങ്ങൾ:

- 1.ദയവായ്നർുേശങ്ങൾശദ്ധരാർവ്വാനുവായ്കുക.
- 2. എലലുചുവടുക്കൾക്കൊംഉത്തരാനുൽകുക.
- 3. നങ്ങളീശെയ്യയൊപ്പ്ഷൻതരീെെകുക.
- 4. ഉചിതമുബുധകസുകൾക്കുൾക്കുൾക്ക് (□) തെയ്യളൊംതുക.

1. □രായം

d. 31-45 വയസ്സ്

a. 46-60 വയസ്സ്

b. 61-75 വയസ്സ്

c. 76-90 വയസ്സ്

2. ലിംഗഭേദം:

- a. സ്ത്രീ
- b. പുരുഷൻ
- c. ലിംഗമില്ലാത്തവർ

3. വർദ്ധനവ്/പ്രതിരോധം

- a. പ്രതിരോധശേഷി (പ്രതിരോധശേഷി)
- b. സാമ്പത്തികപ്രതിരോധം (8-12 ക്ലസ്റ്റർ)
- c. പ്രതിരോധം
- d. പ്രതിരോധശേഷി
- e. പ്രതിരോധം

4. വ്യക്തിഗതം:

- a. സ്ത്രീ
- b. വ്യക്തിഗതം/വ്യക്തിഗതം
- c. വ്യക്തിഗതം
- d. വ്യക്തിഗതം
- e. വ്യക്തിഗതം

5. തിരഞ്ഞെടുക്കൽ:

- a. സർക്കാർ ഉദ്യോഗസ്ഥൻ
- b. സേവനദാതാവ്
- c. ദാതാവ്
- d. മറ്റ്

6. രാജ്യസംഗ്രഹം:

- a. <10,000 രാജ്യ
- b. 10,001- 30,000 രാജ്യ
- c. 30,001-50,000 രാജ്യ
- d. >50,000 രാജ്യ

7. തിരഞ്ഞെടുക്കുന്നതുകൊണ്ട്:

- a. ഗവണ്മന്ത്രി
- b. മന്ത്രിസഭ
- c. കോർപ്പറേഷൻ

8. തിരഞ്ഞെടുക്കുന്നതുകൊണ്ട്:

- a. < 5 ക.മി
- b. 6 - 10 ക.മി
- c. 11- 15 ക.മി
- d. 16- 20 ക.മി
- e. >20 ക.മി

വിഭാഗം - ബി ക്ലിനിക്കൽ
വരിയബിളുകൾ

1. അസുഖത്തിന്റെ ദൈർഘ്യം:

- a. <3 വർഷം
- b. 4-6 വർഷം
- c. 6 വർഷം

2. വ്യക്തിഗത കാര്യങ്ങൾ ഉൾപ്പെടെയുള്ള അനുഭവങ്ങൾ?

- a. മെർത്താം
- b. റീഹാജൂററുസ്
- c. മദർസ്
- d. അമതവണ്ണം
- e. ബലയർ സ്റ്റുഡൻസ്
- f. യെബർസ് റീമലറുസ്
- g. സ്റ്റർവീമയ
- h. ഹ്വെമുക്കമുറുസ്
- i. വൽസൺസ് റുറഗാം
- j. സേയാം റുറഗം
- k. വലതവശത്താള ഹിദയ രരജയാം
- l. അജ്ഞാതഘടകങ്ങൾ
- m. മറുളവ,
- n. അരകെ ഘടകാംവകുശമടക്കുക.....

3.നങ്ങൾ ആഴയൽ മദർാം കഴക്കൻ ആളറിണൽ, ആഴയൽകഴക്കൻ മദർത്തൻറററളവ്?

- a. 7-ൽ തടിഴ മദർാംഅങ്ങയരടന്യങ്ങൾ
- b. 7മടൽ14 വീരമദർാംഅങ്ങയരടന്യങ്ങൾ
- c. 14മടൽ21 വീര മദർാംഅങ്ങയരടന്യങ്ങൾ
- d. 21-ലധകാംമദർാംഅങ്ങയരടന്യങ്ങൾ

സഡഡരണയഡയനങ്ങൾ ഏതതരാംമദർാംഅങ്ങയരടന്യങ്ങൾആണ് ഉറുഡഗ്കുറുളത്, വകുശമടക്കുക.....

4.കൾറുറഗങ്ങളുറീഏറീൽലറാംകുറുറാംബചർ താൻങ്ങൾകുറുണ്ടഡ?

- a. ഉണ്ട്
- b. ഇലല ഉറീണ്ടൽ, റുറഗാം വകുശമടക്കുക.....

5.നങ്ങൾകുറീവ്ളാംകുറുക്കുറുൻതൻയ നണമറുണ്ടഡ?

- a. ഉണ്ട്

b. ഇലല

അതീതഎൽ,

□രത്ദനാംകൃക്ടവ്യന്ീവ്ളത്ത്നീറത്തളവൃയക്തമടക്ടക.....
.....

6. ന്ങൾക് ഉപ്പ് ന്യന്തനമട്രുണ്ടട?

a. ഉണ്ട്

b. ഇലല

അതീത എൽ, എന്ത ഘടാം എന്ത് വക്ടതമടക്ടക.....

7. ന്ങൾ എന്ത കടലമടയ കരൾ റുരഗചക്സയയലടണ്?

a. ≤1 വർഷാം

b. ≤3 വർഷാം

c. ≤6 വർഷാം

8. ന്ങളൂീം ചർമ്മത്തന്ദാം കണ്ണന്ദാം മെ നറമടുണട?

a. ഉണ്ട്

b. ഇലല

9.വയറന്ീറ വലപ്പത്തൽ എൻൽലദാം വർദ്ധനവ്
ുതടന്ദറുണ്ടട?

a. ഉണ്ട്

b. ഇലല

10.ന്ങൾക് കടലകളലദാം കണെടലകളലദാം വ്കാം ഉണ്ടട?

a. ഉണ്ട്

b. ഇലല

11.ന്ങളൂീം മാന്താം ഇരണ്ട നറത്തൽ കടണീപ്പെന്ദുണ്ടട?

a. ഉണ്ട്

b. ഇലല

12.ന്ങളൂീംമലാംഇരണ്ടുതട രക്താം കലർന്ുതട
ആയകടണീപ്പെന്ദുണ്ടട?

a. ഉണ്ട്

b. ഇലല

13.ന്ങൾക് ഓക്ടനുമട ഛർയുടഅന്ദവീപ്പെന്ദുണ്ടട?

a. ഉണ്ട്

ഉപകരണം II

ഘടകങ്ങളുടെ വർദ്ധനവ് (CLDQ)-

ഘടകങ്ങളുടെ വർദ്ധനവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.

നിർവ്വേദങ്ങൾ:

1. നങ്ങളുടെ കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.
2. ദയവയ്ക്കുന്ന കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.
3. ഓരോ കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.
4. വശങ്ങളിലെ കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.

		ദൈവ സമയത്തോടു ഇല്ലാ	കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ്	ചലന സമയങ്ങളിൽ	ദൈവ സമയത്തോടു	മിക്കാളുകളോടു	മിക്കാളുകളോടു	എല്ലാ സമയത്തോടു
1	കഴിവ് ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും കഴിഞ്ഞ തിരഞ്ഞെടുപ്പിന്റെ ഫലപ്രസാദം ഉൾപ്പെടെയുള്ള കഴിവ് വർദ്ധിപ്പിക്കാനും.							

2	കഴരണ്ടെടുപ്പ് യ്ക്കെടുപ്പിൻ ഞൾ എതസമയാം ക്ഷണ ുമു തളർച്ചയു അനുഭ വച്ചുണ്ടു?							
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3	കഴരണ്ടെടുപ്പ് യ്ക്കെടുപ്പിൻ ക്ഷണ എതസമയാംശു രർകുവദന അനുഭവച്ചുണ്ടു?							
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4	കഴരണ്ടെടുപ്പ് യ്ക്കെടുപ്പിൻ എതവണരകൽ സമയത്തു ുതുന്നുണ്ടു ?							
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5	കഴരണ്ടെടുപ്പ് യ്ക്കെടുപ്പിൻ എതസമയാംവയറുവദന അനുഭ വിച്ചുണ്ടു?							
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6	കഴരണ്ടെടുപ്പ് യ്ക്കെടുപ്പിൻ ജീവനുവദന വർത്തനങ്ങളു ശേദസതെസ്സാമര ശുദ്ധയൻ ക്ഷണവീ ളുണ്ടു?							
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7	<p>കുഴപ്പമില്ലാത്ത യുക്തമായ മതാചാരങ്ങൾ പാലിക്കുന്ന സാമൂഹിക മൂല്യങ്ങൾ?</p>	ഭക്ഷ-						
8	<p>കുഴപ്പമില്ലാത്ത യുക്തമായ മതാചാരങ്ങൾ പാലിക്കുന്ന സാമൂഹിക മൂല്യങ്ങൾ?</p>							
9	<p>കുഴപ്പമില്ലാത്ത യുക്തമായ മതാചാരങ്ങൾ പാലിക്കുന്ന സാമൂഹിക മൂല്യങ്ങൾ?</p>							
10	<p>കുഴപ്പമില്ലാത്ത യുക്തമായ മതാചാരങ്ങൾ പാലിക്കുന്ന സാമൂഹിക മൂല്യങ്ങൾ?</p>							
11	<p>കുഴപ്പമില്ലാത്ത യുക്തമായ മതാചാരങ്ങൾ പാലിക്കുന്ന സാമൂഹിക മൂല്യങ്ങൾ?</p>							

12	<p>കുഴപ്പമില്ലാത്ത യുക്തിയുടമകൾ ക്ഷമയോടെ സഹായം തേടുന്നുണ്ടോ?</p>							
13	<p>കുഴപ്പമില്ലാത്ത യുക്തിയുടമകൾ വേണ്ടുന്നതെല്ലാം ലഭിക്കുന്നുണ്ടോ?</p>							
14	<p>കുഴപ്പമില്ലാത്ത ചെറിയ യുക്തിയുടമകൾ സഹായം തേടുന്നതിനോട് ക്ഷമയോടെ സഹായം തേടുന്നുണ്ടോ?</p>							
15	<p>കുഴപ്പമില്ലാത്ത യുക്തിയുടമകൾ എല്ലാ വേണ്ടുന്നതും ലഭിക്കുന്നുണ്ടോ?</p>							
16	<p>കുഴപ്പമില്ലാത്ത ചെറിയ യുക്തിയുടമകൾക്ക് സഹായം തേടുന്നതിനോട് ക്ഷമയോടെ സഹായം തേടുന്നുണ്ടോ?</p>							
17	<p>കുഴപ്പമില്ലാത്ത യുക്തിയുടമകൾ സഹായം തേടുന്നതിനോട് ക്ഷമയോടെ സഹായം തേടുന്നുണ്ടോ?</p>							

18	കുറെണ്ടപ്പയ്ക്കയ്ക്കെട്ട്തസമയാൻങ്ങളീകെരശുരഗത്തൻീറആ ഘടതീത്തകുർച്ചുൻങ്ങളുവവലപതിപ്പട്ടുണ്ട?							
19	എതസമയാംകുറെണ്ടപ്പയ്ക്കീകെൻങ്ങളുരഗത്തൻീറആ ഘടതീത്തകുർച്ചുൻങ്ങളുവവലപതിപ്പട്ടുണ്ട?							
20	എതസമയാംകുറെണ്ടപ്പയ്ക്കീകെൻങ്ങളുരഗത്തൻീറആ ഘടതീത്തകുർച്ചുൻങ്ങളുവവലപതിപ്പട്ടുണ്ട?							
21	എതവണകുറെണ്ടപ്പയ്ക്കീകെൻങ്ങളുരഗത്തൻീറആ ഘടതീത്തകുർച്ചുൻങ്ങളുവവലപതിപ്പട്ടുണ്ട?							
22	എതസമയാംകുറെണ്ടപ്പയ്ക്കീകെൻങ്ങളുരഗത്തൻീറആ ഘടതീത്തകുർച്ചുൻങ്ങളുവവലപതിപ്പട്ടുണ്ട?							

23	ആവഷമച്ചുണ്ട?							
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23	<p>എക്രമമയാം കഴരണ്ടടൂ യ്ക്കീം നങ്ങളീവെടയള ണങ്ങയതടയ ടൂതടന്?</p>							
24	<p>എക്രമമയാം കഴരണ്ടടൂ യ്ക്കീം നങ്ങളീക്കേഷടദാം ടൂതടന്യട്ടുണ്ട് ?</p>							
25	<p>കഴരണ്ടടൂ യ്ക്കീളൽഎക്രമ മയാംനങ്ങളീം വസ്ഥവഷളടകീമ ന്നീനകീട്ന ണങ്ങവഷമച്ചട്ടു ടൂണ്ടട?</p>							
26	<p>കഴരണ്ടടൂ യ്ക്കീളൽഎക്രമ മയാംനങ്ങളീക്കീശ ഡുകീരകീനന്തീരങ്ങളുണ്ടടയ ?</p>							
27	<p>കഴരണ്ടടൂ യ്ക്കീളൽനങ്ങളീ എക്രതവണീചടർ ച്ചൽമാലാം അസേസ്ഥനടയര ന്?</p>							

28	<p>കുഴപ്പം രണ്ടുപേർക്കിടയിൽ സമയാനങ്ങൾ കലണ്ടർ സമ്പാദ്യം നിലവിലുള്ള എന്തിനായി ആശയവിനിമയം?</p>							
29	<p>നങ്ങൾക്കിടയിൽ മറ്റൊരു സ്കാലർ ആവശ്യമില്ലാതെ ,കുഴപ്പം രണ്ടുപേർക്കിടയിൽ ലഭിക്കുന്നതിനായി എന്തിനായി ആശയവിനിമയം?</p>							