

UNIVERSITI TEKNOLOGI MARA

**DETERMINANTS OF MALNUTRITION IN CHRONIC LIVER
DISEASE PATIENTS IN HOSPITAL SELAYANG USING
ROYAL FREE HOSPITAL NUTRITIONAL PRIORITIZING
TOOL (RFH-NPT)**

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ABSTRACT

Malnutrition has become a common problem that is associated with chronic liver disease (CLD), with a prevalence of 50 - 90%, and correlated with an increased risk of mortality and morbidity among CLD patients. This study aimed to investigate the determinants of malnutrition among CLD patients. This study involved 85 CLD patients at Hospital Selayang. The nutritional status of the participants was obtained by anthropometric measurements, including weight, height, body mass index, mid-upper arm circumference, and skinfold thickness (tricep skinfold thickness, chest skinfold thickness, and subscapular skinfold thickness). The biochemical findings of albumin, total bilirubin, alkaline phosphatase, alanine aminotransferase, and aspartate aminotransferase were obtained from medical records. Nutrition screening using RFH-NPT and food/nutrition-related history were determined. Meanwhile, the health-related quality of life (HRQoL) data was obtained using the Short Form 36 (SF-36). All data obtained from this study were analysed using Statistical Package for the Social Sciences (SPSS) version 29: descriptive statistics, Chi-square test or Fisher-Freeman-Halton Exact test, and ordinal logistic regression. CLD patients had low means of calorie and protein intake, 15.26 ± 5.71 kcal/kg/day, and 0.64 ± 0.29 g/kg/day, respectively. They reported a low HRQoL, with a decrease in most HRQoL components except for role limitations due to emotional problems, emotional well-being, social functioning, and body pain. There was also a significant association between anthropometric data and HRQoL with the risk of malnutrition. Multivariate analysis highlighted that calorie intake (OR = 25.336, 95% CI: 1.426, 450.281, $p = 0.028$), ascites (OR = 0.076, 95% CI: 0.013, 0.440, $p = 0.004$), and role of limitations due to emotional problems (OR = 0.114, 95% CI: 0.025, 0.509, $p = 0.004$) were independent risk factors of malnutrition risk. In conclusion, the findings obtained will assist healthcare providers in determining malnutrition risk among CLD patients.

Keywords: malnutrition, chronic liver disease, RFH-NPT, nutritional status, health-related quality of life, liver cirrhosis.

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CHAPTER 1: INTRODUCTION

1.1 Background of the Study

Chronic liver disease (CLD) is characterised as a continuous deterioration of liver functions that lasts more than six months, including detoxification of toxic metabolic products, clotting factor synthesis or other protein synthesis, and bile excretion. According to Sharma and Nagalli (2023), in their previous study, CLD is defined as a chronic disorder characterised by inflammation, regeneration, and destruction of the liver parenchyma, which results in fibrosis and cirrhosis. The liver is an organ that is responsible for glucose, protein, and lipid metabolism, vitamin activation and storage, and detoxification and excretion of exogenous and endogenous products. Therefore, people with CLD go through a hard time to functionally metabolise their food intake daily.

The World Health Organization (WHO) defined malnutrition as nutritional deficits or excesses, nutrient imbalance, or inadequate nutrient utilisation. Malnutrition is either a widespread or underreported problem in developing countries of South Asia (Siddiqui et al., 2021). Malnutrition is known to have a significant influence on people with liver cirrhosis. Usually patients with chronic conditions often experience malnutrition because they are unable to consume sufficient food to meet their needs. According to Siddiqui et al. (2021), several research studies have assessed the nutritional status of liver cirrhosis from various etiologies and degrees of liver insufficiency. All these studies have proven that malnutrition can be detected in all forms of liver cirrhosis, with a prevalence of 65 to 100% (Siddiqui et al., 2021). Patients with chronic liver disease have become malnourished because of a decrease in energy and protein intake due to loss of appetite, malabsorption, maldigestion, loss of nutrient storage capacity of the liver, and altered nutrient metabolism (Traub et al., 2021). Malnutrition will become a complication for chronic liver disease patients because it has an adverse effect on their disease progression and outcomes. Moreover, a previous study has stated that malnourished patients had twice the rate of hospitalization and mortality as compared to adequately nourished patients (Traub