

UNIVERSITI TEKNOLOGI MARA

**VALIDATION OF RFH-NPT
SCREENING TOOLS TO DETECT
RISK OF MALNUTRITION IN
PATIENTS WITH CHRONIC LIVER
DISEASE**

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ABSTRACT

Introduction: Hepatic diseases patients are especially prone to malnutrition, which is often underestimated. Malnutrition screening in liver cirrhosis is challenging due to the presence of fluid retention. Screening tools have been developed to spot out the risk of malnutrition in patients. However, most have not been validated for patients with liver disease. The results aimed to validate the specific Royal Free Hospital Nutritional Prioritizing Tool (RFH-NPT) in chronic liver disease patients and also to evaluate the association between RFH-NPT, Nutritional Risk Screening (NRS 2002) and Subjective Global Assessment (SGA) tool. **Methods:** This was a cross sectional study to validate the RFH-NPT in chronic liver disease patients. Content validity was confirmed by interviewing eight liver disease professionals. Face validity was assessed by surveying forty nurses working in the liver disease ward. In addition, agreement between NRS 2002, RFH-NPT and nutrition assessment was assessed using the SGA tool. **Results:** Eighty patients with chronic liver disease participated in this study. The SGA assessment identified malnutrition in 75% of patients (95% CI, 60%–95%) while 80% (95% CI, 65%-80) were found as at risk of malnutrition using RFH-NPT. The κ -statistic indicated a fair agreement in the assessment of nutritional status between the RFH-NPT and SGA assessment. High sensitivity and moderate specificity of RFH-NPT were 97% and 74%, respectively, and the positive predictive value was measured at 95%. **Conclusion:** The RFH-NPT is the first and most reliable nutrition screening tool in this population to assess the risk of malnutrition. Thus, inclusion of the RFH-NPT with NRS 2002 demonstrated positive and a fair agreement between the SGA and RFH-NPT tool to be used as a routine nutrition screening protocol for identifying chronic liver disease patients at risk of malnutrition.

Keywords : Royal Free Hospital Nutritional Prioritizing Tool, nutrition screening, liver disease, cirrhosis, validation

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TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	iii
AUTHOR'S DECLARATION	iv
ABSTRACT	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xii
CHAPTER 1: INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Research Objectives	5
1.3.1 General Objective	5
1.3.2 Specific Objectives	5
1.4 Research Question	5
1.5 Significance of Study	5
CHAPTER 2: LITERATURE REVIEW	8
2.1 Liver Disease	8
2.1.1 Types of Liver Disease	8
2.1.2 Prevalence of Liver Disease	16
2.2 Malnutrition in liver disease	17
2.2.1 Definition of Malnutrition	18
2.2.2 Etiology of malnutrition in hepatic liver disease	28
2.3 Nutritional intervention for chronic liver disease patients	34
2.3.1 Consequences of malnutrition among hepatic liver disease patient	37
2.4 Nutritional Screening Tools	39

CHAPTER 1

INTRODUCTION

1.1 Research Background

Cirrhosis is the eleventh leading cause of death and the fifteenth leading cause of morbidity, accounting for 2.2% of deaths and 1.5% of disability-adjusted life years worldwide in 2016 (Cheemerla & Balakrishnan, 2021). The cirrhotic liver is characterised by fibrosis, and the normal architecture is converted to structurally abnormal nodules that lack lobular organization. It involves the entire liver and is irreversible in its late stages. Cirrhosis is a disease of contract in aetiology and symptomatology. The most common aetiology has been alcoholic liver disease and chronic viral hepatitis (Hepatitis C and Hepatitis B).

Fatty liver disease has increasing prevalence across the world and is known to progress to cirrhosis and is becoming one of the leading causes of cirrhosis globally (Cheung et al., 2012). Cirrhosis can be asymptomatic or presents with manifestations of hepatic decompensation as evidenced by variceal bleeding, ascites, hepatic encephalopathy and hepatorenal syndrome.

The nutritional status of acutely hospitalised chronic liver disease patients frequently deteriorates and often leads to malnutrition (Rajab et al., 2023). Nutrition is one of the most important factors that can influence overall mortality and morbidity. Malnutrition and sarcopenia in individuals suffering from severe liver cirrhosis are not just attributed to modifications in nutritional behaviour but also to physiological changes occurring in the gastrointestinal tract, liver, and muscle. An augmented excretion of protein through the gastrointestinal system, kidneys, or numerous paracenteses can further exacerbate the situation. Individuals diagnosed with chronic advanced liver disease experience increased symptoms such as elevated fatigue, nausea, bloating, and anorexia, leading to a subsequent decrease in their dietary consumption. When clinically significant ascites are present, the mechanical impact might exacerbate nutritional issues by compressing the stomach, leading to a sensation of early fullness (Stirnimann & Stirnimann, 2019).