

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT AND VALIDATION OF A NUTRITION
EDUCATION MODULE FOR HYPERLIPIDEMIA PATIENTS IN
MALAYSIA**

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ABSTRACT

In Malaysia, hyperlipidemia has affected more than 38% of adults and remains a major modifiable risk factor for cardiovascular disease, which is the leading cause of death in the country. Despite its high prevalence, adherence to dietary counselling among patients remains suboptimal, limiting the effectiveness of lipid management strategies. Moreover, there is currently no structured and validated nutrition education module specifically developed to support dietary counselling for hyperlipidemia in Malaysia. The main objective of this study was to explore the barriers and challenges to dietary counselling adherence among hyperlipidemia patients and to develop and validate a nutrition education module. This study employed a Developmental Research Design (DDR) consisting of three phases. Phase I involved a secondary analysis of interview data from ten patients with hyperlipidemia to explore the barriers associated with dietary adherence using thematic analysis. In phase II, findings from Phase I, together with national dietary guidelines, guided the development of the LipiGO Module. The module was designed using Canva and includes 51 full-colour pages across six key chapters. Lastly, Phase III involved content and face validation by six expert panels and ten patients with hyperlipidemia using the Content Validity Index (CVI) and Face Validity Index (FVI), which were analysed using Microsoft Excel. As a result, the module demonstrated strong agreement across all items, confirming the module's scientific relevance, clarity, and usability. Suggestions provided were incorporated to improve clarity and alignment with current practices. In conclusion, the LipiGO Module is a valid nutrition education that can be used for both clinical counselling and independent patient use. This module has strong potential to enhance dietary counselling outcomes and improve lipid profile among hyperlipidemia patients in Malaysia.

Keywords: Hyperlipidemia, Nutrition Education, Module Development, Face Validity, Content Validity, Malaysia

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CHAPTER ONE: INTRODUCTION

1.1 Research Background

Hyperlipidemia is a medical condition characterised by an increase in one or more plasma lipids, including cholesterol, triglycerides, and plasma lipoproteins such as very low-density lipoprotein (VLDL) and low-density lipoprotein (LDL) (Pappan et al., 2024). This elevation of plasma lipids is a significant risk factor associated with cardiovascular diseases (CVD), which remains the leading cause of morbidity and mortality worldwide. In 2019, an estimated 17.9 million people died from CVDs, representing 32% of all global deaths (World Health Organisation, 2021). Among these, high cholesterol alone contributed to 4.4 million deaths each year, accounting for 7.8% of all deaths, which highlights its critical impact on public health (World Heart Federation, 2024). However, most lipid disorders (80%) are associated with lifestyles and diet despite the significant role of familial disorders (20%) (Davidson & Altenburg, 2025).

In Malaysia, the prevalence of hyperlipidemia has been progressively increasing. This is a concern as it is a growing burden of cardiovascular diseases (CVDs) (Mohamed-Syarif, Mohamed-Yassin et al., 2021). According to the National Health and Morbidity Surveys (NHMS, 2015), the prevalence of hyperlipidemia has increased dramatically over the years, from 20.7% in 2006 to 47.7% in 2015. This becomes more concerning as younger age groups are also affected, with nearly 1 in 5 adults aged 18–19 years showing raised cholesterol levels, and the prevalence peaks at 68.8% among those aged 55–59 (Ministry of Health Malaysia, 2017). Ethnic disparities also play a critical role in hyperlipidemia prevalence. This was proven by National Health and Morbidity Surveys (2019) that state overall raised blood cholesterol was more common among Malays, 43.5%, with hypercholesterolemia being a common comorbidity in over half (54.8%) of patients undergoing percutaneous coronary intervention (PCI) and 38.6% of those with acute coronary syndrome (ACS). Thus, these overlapping trends of rising cases across age groups and ethnic disparities emphasise the urgency of addressing hyperlipidemia as a public health priority.