

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT AND CONTENT VALIDATION OF
FUNCTIONAL FOODS EDUCATION MODULE
FOR ADULTS IN MALAYSIA**

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ABSTRACT

Non-communicable diseases (NCDs) such as obesity, type 2 diabetes, and cardiovascular disease are increasing among Malaysian adults aged 19-65 years (NHMS, 2019). Functional foods, which provide health benefits beyond basic nutrition, have the potential to mitigate these conditions. However, awareness and understanding of functional foods remain low due to limited public education and engagement with conventional health education. This study aimed to develop and validate an infographic-based educational module on functional foods tailored to Malaysian adults, to enhance knowledge, motivation and healthier dietary choices. A Design and Development Research (DDR) approach was applied in three phases: (1) Needs Analysis which involving review of literature and national dietary guidelines to inform content; (2) Design and Development which creation of 32-page module using Canva, featuring infographics, simple language and culturally relevant content; and (3) Evaluation which content validation by eight experts in medicine and dietetics using the Educational Content Validation Instrument in Health (ECVIH). Validation metrics included Item Content Validity Index (I-CVI), Scale-level CVI (S-CVI/Ave) and Universal Agreement (S-CVI/UA). The module showed strong content validity. The relevance domain scored highest (S-CVI/Ave = 0.875), followed by structure/presentation (S-CVI/Ave = 0.79) and objectives (S-CVI/Ave = 0.75). While most experts agreed on the module's clarity and value, suggestions were made to improve language simplicity and interactivity. The content was praised for its evidence-based information, visual appeal and potential to influence knowledge and attitudes about functional foods. This validated module presents a promising tool to improve functional food literacy and promote healthier eating among Malaysian adults. Future efforts should focus on translation into Bahasa Malaysia, end-user testing and integration into public health programs.

Keywords: Functional foods; Educational module; Non-communicable diseases; Content validation; Malaysian adults, Infographic-based learning

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

According to the Food and Drug Administration, functional food is a natural or processed foods that consist of biologically-active compounds that are effective, in non-toxic amounts, provide scientifically proven and documented health advantages utilising specific biomarkers, to promote optimum health and reduce the risk of chronic diseases and manage their symptoms (Martirosyan et al., 2021). Concept of nutrition has shifted to an advanced understanding where nutrition is not only consisting of proper nutrition that satisfies the hunger but also an optimum nutrition that can give a potential positive effect to the health status more than basic nutrition could provide, which is called functional food (Firdaus et al., 2024).

Superfoods are a marketing term for functional food that indicates the food is nutrient-dense, and it can be categorised into three types, which are natural or unprocessed. Next, novel functional food is produced by biotechnology, which is said to have greater disease resistance. Also, processed functional food is naturally concentrated and less energy-dense with multiple nutritional benefits (Gupta & Mishra, 2021). These processed food products can be grouped into four classifications, fortified, enriched, altered and enhanced commodities. The first category is fortified products, where additional nutrition was added to the food products. The next category is enriched products, where new nutrients that were usually not in the food are added to the food. The third category is enhanced commodities, when the nutrients in the food are being enhanced naturally. The last category is altered products that remove unexpectedly damaging components from the food products (Bigliardi et al., 2013; Rizwana et al., 2021).