

UNIVERSITI TEKNOLOGI MARA

**EVALUATION OF A DIETARY ASSESSMENT TOOL ON SUGAR-
SWEETENED BEVERAGES AND HIGH ENERGY-DENSE FOODS
CONSUMPTION IN YOUNG ADULTS**

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Thesis submitted in fulfilment of the requirements for the degree of
**Bachelor (Hons.) of Dietetics Faculty of Health
Sciences**

JULY 202

ACKNOWLEDGEMENT

First and foremost, praises and thanks to God, the Almighty, for His showers of blessings throughout my undergraduate years to complete this final year project successfully. I would like to take this opportunity to express my deepest gratitude and heartiest thanks to my final year project supervisor, Prof. Madya Dr. Siti Sabariah Buhari, for the unwavering advice, support, and guidance that have enabled me to complete this project. Her enthusiasm and patience, along with her immense knowledge that she has shared with me, were paramount in pushing me to carry out this research project to completion. It was a great privilege and honour to learn under her guidance.

My heartfelt thanks go to my parents, whose unconditional love, constant prayers, and full understanding have been my greatest source of strength throughout my undergraduate journey. I would also like to thank my entire family for their patience, support, and motivation that helped keep me going, especially during the most challenging moments.

I would like to express my deepest gratitude to all the participants who volunteered their time, shared their experiences, and showed great willingness to engage in this study. Their contributions were invaluable to the success of this project. I am also truly grateful to my friends and peers who have supported me throughout this academic journey. Their encouragement, advice, and moral support have helped me stay motivated, especially during challenging times.

Lastly, I would like to extend my gratitude to myself for the perseverance and determination shown throughout this journey. Despite the challenges, late nights, and moments of doubt, I remained committed to completing this project. This experience has tested me in many ways, and I am truly proud of the progress and growth I have achieved.

ABSTRACT

Valid and reliable dietary assessment tools are crucial for understanding dietary patterns and their association with health outcomes. This study focused on evaluating the validity and reproducibility of a food frequency questionnaire (FFQ) developed to assess the intake of sugar-sweetened beverages (SSBs) and high-energy dense (HED) foods among young adults in Malaysia. This study aimed to establish content and face validity, examine criterion validity by comparing the FFQ with three 24-hour dietary recalls (24HDR), and assess reproducibility using a test–retest method. The study involved 54 Malaysian young adults. Content and face validity were assessed through expert review, and participant feedback supported the relevance and clarity of the FFQ items. Criterion validity, the FFQ was compared to non-consecutive 24-hour dietary recalls (24HDR). Reproducibility was evaluated using a test-retest approach. Statistical analyses included Spearman rank correlation coefficients, Wilcoxon signed-rank tests, Intraclass Correlation Coefficients (ICCs), and Bland–Altman analysis. Content and face validity confirmed that the FFQ items were clear, relevant, and appropriate for the target population. For criterion validity, Spearman correlations between FFQ and 24HDR ranged from 0.01 to 0.39, with higher correlations observed for biscuits, cake & bread. Wilcoxon signed-rank tests showed no significant differences in intake for most food groups ($p > 0.05$), indicating acceptable agreement. Bland–Altman plots demonstrated that most data points fell within the limits of agreement. ICCs for test–retest reliability ranged from moderate to excellent (0.52 to 0.88), supporting the reproducibility of the FFQ. The findings support the FFQ as a valid and reliable tool for assessing SSB and HED food intake in Malaysian young adults. This tool could help with future research, monitoring, and public health initiatives aimed at improving food habits and reducing noncommunicable disease risk in this community.

Keywords: Food frequency questionnaire, Sugar-sweetened beverages, High-energy dense foods, Validity, Reproducibility, Young adult.

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CHAPTER 1: INTRODUCTION

1.1 Research Background

Unhealthy dietary patterns have become a pressing concern globally, particularly among young adults. Among the major contributors to poor diet quality are sugar-sweetened beverages (SSBs) and high-energy dense foods (HEDs). These two categories of food and beverages are commonly consumed, energy-rich, and low in essential nutrients, and are strongly linked to the rising prevalence of non-communicable diseases (NCDs) such as obesity, diabetes, and cardiovascular diseases.

Young adulthood is marked by various transitions, including alterations in living arrangements, employment, financial situations, and significant life events such as marriage and family formation, which may influence health behaviors, such as dietary choices (McNaughton et al., 2020). Within this age group, university students often serve as a convenient and representative sample for research, as they commonly face lifestyle and environmental factors that contribute to poor dietary patterns.

According to the World Health Organization (WHO), sugar-sweetened beverages (SSBs) are defined as all types of beverages containing free sugars, including carbonated or non-carbonated soft drinks, fruit/vegetable juices and drinks, liquid and powder concentrates, flavoured water, energy and sports drinks, ready-to-drink tea, coffee, and flavoured milk drinks. The increasing consumption of sugar-sweetened beverages (SSBs) in Malaysia is a growing public health concern, particularly among adolescents and young adults. In Malaysia, young adults consume SSB at a relatively high proportion of 51.6%