

UNIVERSITI TEKNOLOGI MARA

**UNVEILING THE IMPACT OF SUGAR
SWEETENED BEVERAGES ON MENSTRUAL
HEALTH OF YOUNG ADULTS IN SELANGOR**

NURFAHIRAH BINTI AHMAD ZAINI

**BACHELOR (HONS.) OF DIETETICS
FACULTY OF HEALTH SCIENCES**

AUGUST 2025

ACKNOWLEDGEMENT

Upon completion of this research proposal, I truly want to offer a hearty appreciation to the key individuals whose unwavering support and guidance have been the backbone of this hard work. Their constant support has been a source of strength for me, and without them, I truly believe this academic milestone would not have been possible. I am deeply thankful for their invaluable presence in this journey.

To my supervisor, Associate Professor Dr. Siti Sabariah Binti Buhari, I am truly grateful to have had you as my supervisor. Thank you for your constant guidance, for encouraging me to explore more, and for always supporting me even with the smallest updates. Your kindness, flexibility, and encouragement made this journey so much lighter and meaningful.

To my beloved family Mak, Ayah, Kakak, and Abang, thank you for always believing in me and supporting me since day one. Your endless encouragement, patience, and unconditional love have kept me going through every high and low. Thank you for always saying yes to everything I needed, for cheering me on even in silence, and for standing by me no matter what. This achievement is not mine alone, it belongs to all of you who raised, shaped, and never gave up on me.

To my dear best friends, thank you for making this study journey so beautifully memorable. You turned every struggle into something lighter just by being there, and your constant support, laughter, and encouragement made everything so much easier. I'm truly grateful we always had each other through it all.

"Last but not least, I want to thank me for believing in me. I want to thank me for doing all this hard work, I want to thank me for having no days off. I want to thank me for...for never quitting, I want to thank me for always being a giver. And try to give more than I receive, I want to thank me for try do more right than wrong. I want to thank me for just being me at all times."

ABSTRACT

Background of Study: Sugar-sweetened beverages (SSBs), such as sweetened coffee, tea, and soft drinks, are highly consumed among young adults in Malaysia. Excessive SSB intake has been linked to insulin resistance and hormonal imbalances, which may affect menstrual health including menarche timing, PMS severity, and menstrual cycle regulation. **Objective:** This study aimed to investigate the association between the frequency of SSB consumption and three key menstrual health outcomes: age at menarche, premenstrual syndrome (PMS) severity, and menstrual cycle length among young women in Selangor. **Method:** A quantitative cross-sectional study was conducted using convenience sampling. A self-administered online questionnaire was distributed via social media platforms. A total of 384 women aged 18–29 who met the inclusion criteria participated. Data were analyzed using the Kruskal–Wallis one-way ANOVA test due to non-normal distribution of variables. **Results:** Significant associations were found between the frequent consumption of 100% fruit juice and soft drinks and a later age at menarche. However, no significant association was observed between SSB intake and PMS severity. Skimmed milk intake showed a statistically significant relationship with menstrual cycle length, but the one-day difference observed was not clinically meaningful. **Conclusion:** Findings suggest that SSBs may influence certain aspects of menstrual health, particularly menarche timing, but have minimal effects on PMS severity and menstrual cycle duration. These results highlight the importance of considering beverage type in reproductive health studies and support the need for further longitudinal research.

Keywords: Sugar-sweetened beverages, Menarche, Premenstrual syndrome, Menstrual cycle, Women's health

TABLE OF CONTENTS

AUTHOR’S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT	v
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
LIST OF NOMENCLATURE	xii
CHAPTER ONE : INTRODUCTION	2
1.1 Research Background	2
1.2 Problem Statement	4
1.3 Research Justification	6
1.4 Research Question	8
1.5 Research Objective	8
1.6 Hypothesis	9
CHAPTER TWO : LITERATURE REVIEW	10
2.1 Impact of Sugar Sweetened Beverages (SSB) Consumption	10
2.2.1 Sugar Sweetened Beverages (SSB)	12

CHAPTER ONE

INTRODUCTION

1.1 Research background

Sugar-sweetened beverages (SSBs) are drinks that contain added sugars, such as soft drinks, sweetened tea and coffee, sports drinks, and energy drinks. These drinks are high in calories but offer very little or no nutritional benefits compared to solid food (Van der Horst et al., 2006). In Malaysia, the consumption of SSBs is high, especially among young adults, with a reported prevalence of 51.6% (Ahmad, 2015). Drinking too many SSBs has been linked to weight gain (Malik et al., 2013), metabolic syndrome, and other serious health problems like diabetes and heart disease (Malik & Hu, 2019).

According to the National Health and Morbidity Survey (NHMS) 2024, 1 in 2 adults and 2 in 3 adolescents in Malaysia consume more sugar than the recommended limit of 37.5 grams (about 7.5 teaspoons) per day. Almost half of this sugar comes from drinks alone, with adults consuming around 4.5 teaspoons and adolescents around 5 teaspoons daily from beverages. This shows an urgent need for stronger public health actions to reduce sugar intake and protect people's health.

On a global level, the consumption of SSBs has also increased sharply over the past few decades. The global prevalence of high SSB consumption among young adults rose from 6.58% in 1990 to 11.13% in 2021. High consumption was defined as drinking beverages with 50 kcal or more per 226.8 grams, not including 100% fruit or vegetable juices (Ge et al., 2025). Females consistently showed higher SSB consumption compared to males. This rising trend is caused by many factors, such as changes in lifestyle, aggressive marketing, easier access to sweetened drinks, and a