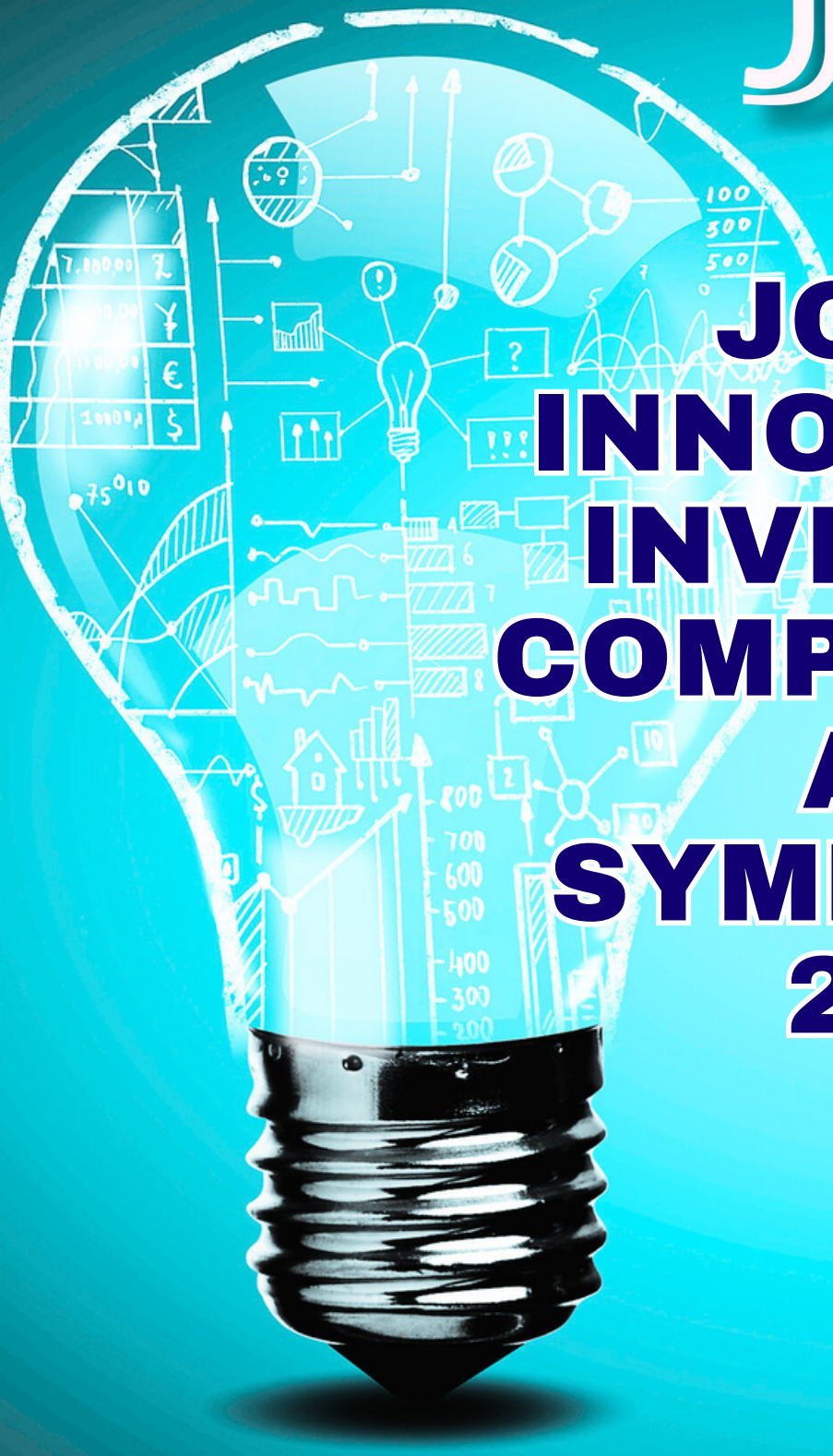
UNIVERSITI TEKNOLOGI MARA

2023

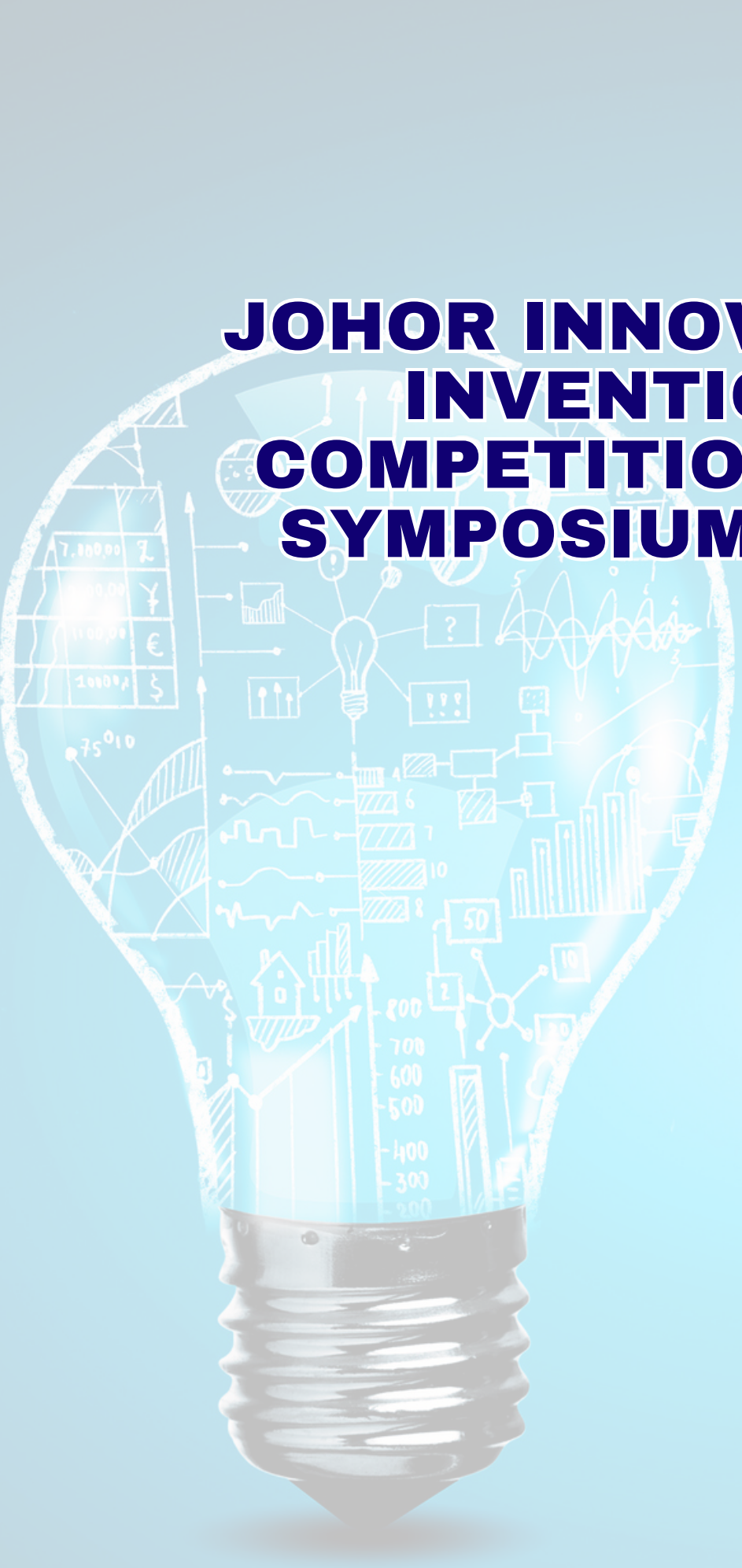
JIICaS



JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023

" Innovation Inspires a Society to be Critical and Creative"

JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023



JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023

" Innovation Inspires a Society to be Critical and Creative"

Editors-in-Chief

AHMAD KHUDZAIRI KHALID

NUR INTAN SYAFINAZ AHMAD

UNIVERSITI TEKNOLOGI MARA

Cawangan Johor

Kampus Pasir Gudang

2023

First Edition 2023

e ISBN: 978-967-0033-17-4

Editors-in-Chief: AHMAD KHUDZAIRI KHALID & NUR INTAN SYAFINAZ AHMAD

Art & Cover Designer: DR. WAN MUNIRAH WAN MOHAMAD & DR. NUR IDAYU ALIMON

Published in Malaysia by
Universiti Teknologi MARA Cawangan Johor
Kampus Pasir Gudang
81750 Masai

Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.

A050

BetterUS : A MOBILE APPLICATION THAT PROMOTES HEALTHY LIFESTYLE

Wong Kher Thi[1], Wong Sru Thi[1], Hee Ka Chun[1], Mohd Hayrie Mohd Hatta[2*]

[1] Department of Biomedical Sciences, Faculty of Health Sciences,
Asia Metropolitan University, 81750 Johor Bahru, Johor, Malaysia.
[2]Centre for Research and Development, Asia Metropolitan University,
81750 Johor Bahru, Johor, Malaysia.

Corresponding author: hayrie@amu.edu.my (Mohd Hayrie Mohd Hatta)

ABSTRACT

This project describes the development of a mobile application that promotes healthy living among people at young age. Technology in the modern period has been aiding the public by keeping track of their health and fitness, which encourages them to embrace good lifestyle choices that enhance their overall health. The purpose of this project is to design a mobile application that can track health conditions in order to prevent chronic diseases such as cardiovascular diseases at an early stage. Nowadays, majority of the population under the age of 40 are diagnosed with serious health conditions. Most fatal diseases frequently come to attention when they are in a critical stage. This project aims to cater or meet the need of Malaysians by creating an application that suites Malaysians lifestyle that is currently lacking in healthy-based application available today. Moreover, this application can be used to warn the potential disease based on the symptoms that the user provided and a proper medication is suggested or a face-to-face consultation with a doctor if required. User will be required to key in their health status and health history as well as their daily food intake to maintain their healthy lifestyle. The health application can act as an early detection tool of chronic diseases and provide online consultation with preferred doctor which enhances people's quality of life. Mobile health tracking applications are changing the way the health consumers especially young age handles their personal health care.

Keywords: Mobile application, health, diseases, quality of life.

1.0 INTRODUCTION

In recent years, the unhealthy lifestyle among young people in Malaysia has become a growing concern. The majority of the population under the age of 40 is diagnosed with serious health conditions. Malaysia is regarded as an unhealthy nation due to the high prevalence of obesity and heart disease ('Malaysia, Unhealthy Nation With Low Health Awareness,' 2021). According to statistics, 3.6 million Malaysians have diabetes, which is currently the highest in Asia, and 6.1 million Malaysians suffer from hypertension. Unhealthy urban lifestyles, which include sedentary behavior, stressful job environments, and bad nutritional practices, are the major contributors to this pandemic.

Among the factors that contribute to an unhealthy lifestyle, dietary habits have taken a turn for the worse. Over time, there has been a sharp rise in the excessive consumption of processed foods and fast food, which frequently substitutes for a balanced and nutritional diet (Gan *et al.,* 2019). According to Irazusta *et al.* (2007), poor dietary practices, such as consuming too many or too few macronutrients, are a significant factor in the etiology of chronic illnesses, such as obesity, cancer, and cardiovascular disease. Besides that, one of the most significant concerns is the increase in sedentary behavior. According to Carballo-Fazanes *et al.* (2020), an excessive amount of sedentary behavior and physical inactivity is linked to a higher risk of

obesity, cancers, cardiovascular illnesses, and diabetes. The likelihood of depression and anxiety has also been found to be higher when physical activity is reduced. Furthermore, many young Malaysians' demanding academic or professional schedules and hectic lifestyles have contributed to elevated stress levels and insufficient sleep. Chronic stress, lack of sleep, and compromised immunity can all have a detrimental effect on mental health (Murukesu *et al.,* 2021).

Nowadays, the majority of the population under the age of 40 is being diagnosed with serious health conditions, such as cancer, diabetes, and cardiovascular diseases. Many life-threatening illnesses become noticeable by people when the disease reached an advanced phase or critical phase. Hence, it is crucial to consistency monitor someone's health status to prevent these conditions. The proposed mobile application developed with aim of helping Malaysian users to keep track their health and receive recommendation of healthier eating habits.

2.0 OBJECTIVE

The main objective of designing this mobile application is to promote healthy lifestyle among youth. It functions as a powerful instrument to promote awareness of healthy lifestyles and is specifically developed to address the requirements of Malaysians through a health-focused app tailored to align with their way of life. This brand-new application will improve choices for leading a better life. Additionally, the app has the capability to notify users of potential illnesses based on the symptoms they gave. Detecting diseases at an early stage can aid in the management of more severe cases. Moreover, the application will suggest suitable medications or advise an in-person consultation with a physician if deemed essential. In mild cases, specific medications will be recommended as temporary treatments, while in severe cases, users will be advised to visit the nearest hospital for a consultation.

3.0 DESCRIPTIVE OF INNOVATION

3.1 Login Page

The login page is the initial page of the BetterUs application, where users can sign up as new users. Once signed up, users can access the main page of *BetterUs*. The interface displays the login page of *BetterU*s, as shown in Figure 1 (left).

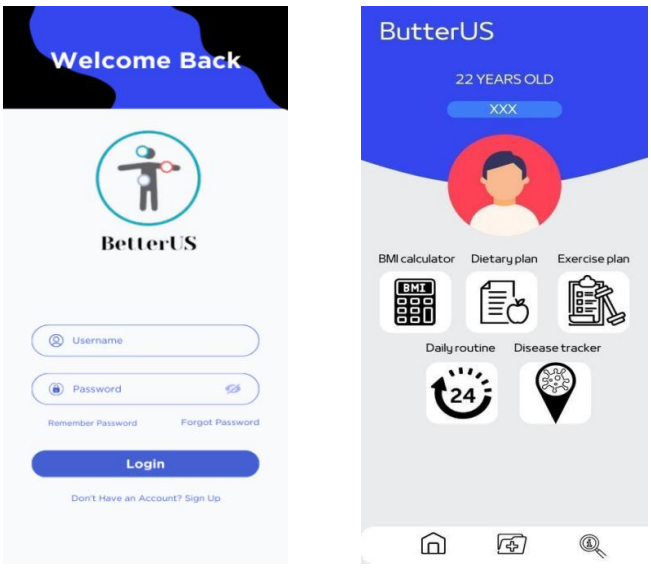


Figure 1 : Login page of *BetterUs* (left) and Menu page of *BetterUs* (right)

3.2 MenuPage

From the *BetterUs* menu page (Figure 1 (Right)), users have the option to access five other interfaces: the BMI calculator, dietary plan, exercise plan, daily routine, and disease tracker. Below, there are three icons: the home page, laboratory report attachment, and options.

3.3 Interface 1(BMI Calculator)

In Interface 1 (BMI calculator), as shown in Figure 2 (Left), users can input their height and weight. The BetterUs system will then automatically display the user's BMI. Users can compare their BMI with the standard BMI chart and click on the dietary plan link to access the next interface, where they can view the dietary plan

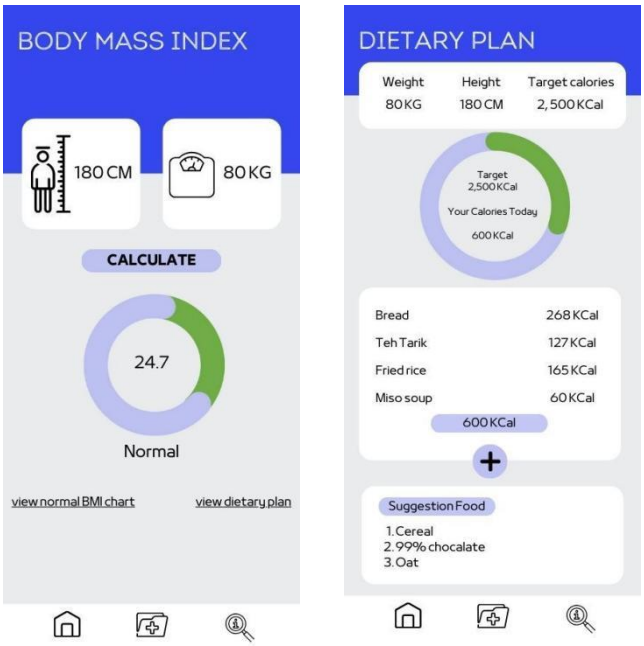


Figure 2 : Interface 1 (BMI calculator) of BetterUs (Left) and Interface 2 (dietary plan) of BetterUs (Right)

3.4 Interface 2 (Dietary Plan)

In Interface 2 (dietary plan), as shown in Figure 2 (Right), the user's weight, height, and target calories are displayed at the top of the interface. Users can input the foods they eat along with their respective calorie counts, and the BetterUs system will also suggest foods and drinks.

3.5 Interface 3 (Exercise Plan)

From the dietary record, BetterUs system will automatically suggest some suitable exercise to users. Besides, after doing the particular exercise, users can record their achievement on the bottom of the interface as presented in Figure 3 (Left).

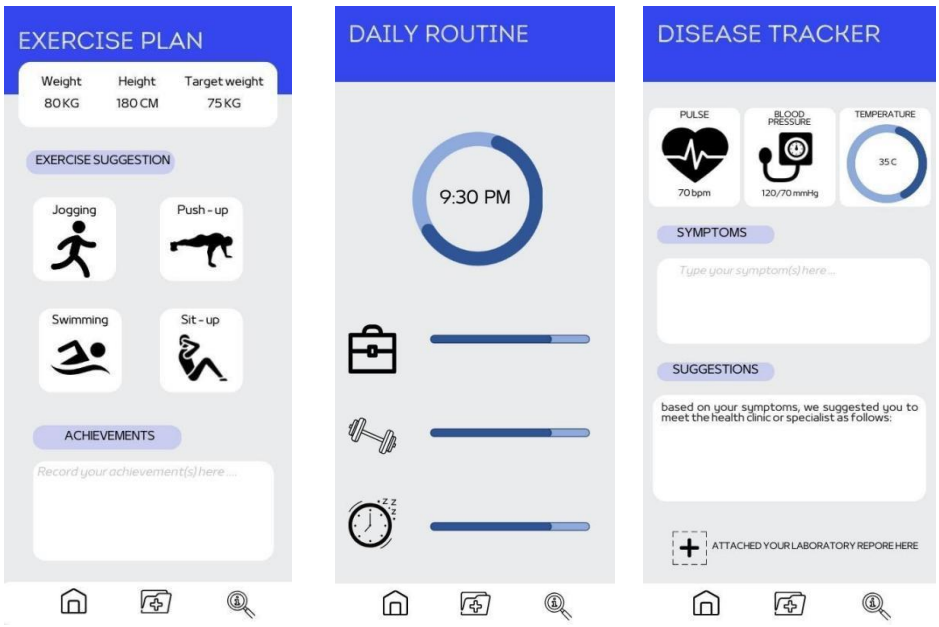


Figure 3: Interface 3 (Exercise Plan) of BetterUs (Left), Interface 4 (Daily Routine) of BetterUs (Middle) and Interface 5 (Disease Tracker) of BetterUs (Right)

3.6 Interface 4 (Daily routine)

In this interface, as shown in Figure 3 (Middle), users can track their daily routine, including work duration, workout duration, and rest time, all recorded by the BetterUs system

3.7 Interface 5 (Disease Tracker)

As illustrated in Figure 3 (Right), users can measure their pulse, blood pressure and body temperature by using a fingerprinting reader on their phone. Besides, users key in their symptoms on the box and BetterUs system will suggest the preferred doctor for users to consult. The consultation will be based on the attachment of laboratory report by using the '+' button below the interface.

4.0 ADVANTAGE

The advantage of BetterUs application is personalised health insight. Users receive their personalised health insight based on the individual personal data and lifestyle choice. Next, BetterUs application aims to prevent and manage the disease. BetterUs application provides tips, information and remainder to help users prevent chronic diseases such as congestive heart disease and manage the existing condition and promote overall well-being. Besides, BetterUs application provides activity tracker. BetterUs application will track user's physical activity and encourage the users to stay active throughout the day.

5.0 CONCLUSION

The goal of this project is to form a link between promoting healthy lifestyle and mobile applications. The project was started because it was realised how common chronic diseases are in Malaysia now, how important it is to maintain a healthy lifestyle, and how independent and well-linked mobile applications are becoming. Mobile health tracking application are changing the way the health consumers especially young age handles their personal health care.

REFERENCE

Carballo-Fazanes, A., Rico-Díaz, J., Barcala-Furelos, R., Rey, E., Rodríguez-Fernández, J. E., Varela-Casal, C., & Abelairas-Gómez, C. (2020, May 8). Physical Activity Habits and Determinants, Sedentary Behaviour and Lifestyle in University Students. *International Journal of Environmental Research and Public Health*, *17*(9), 3272. https://doi.org/10.3390/ijerph17093272

Gan, W. Y., Mohamed, S. F., & Law, L. S. (2019). Unhealthy lifestyle associated with higher intake of sugar-sweetened beverages among Malaysian school-aged adolescents. *International Journal of environmental research and public health*, 16(15), 2785.

Irazusta, A., Hoyos, I., Irazusta, J., Ruiz, F., Díaz, E., & Gil, J. (2007). Increased cardiovascular risk associated with poor nutritional habits in first-year university students. *Nutrition Research*, *27*(7), 387–394. https://doi.org/10.1016/j.nutres.2007.05.007

Malaysia, unhealthy nation with low health awareness. (2021, November 11). *New Straits Times*. Retrieved September 6, 2023, from https://www.nst.com.my/news/nation/2021/11/744515/malaysia-unhealthy-nation-low-health-awareness

Murukesu, R. R., Singh, D. K. A., Shahar, S., & Subramaniam, P. (2021). Physical activity patterns, psychosocial well-being and coping strategies among older persons with cognitive frailty of the “WE-RISE” trial throughout the COVID-19 movement control order. *Clinical interventions in aging*, 415-429.