

**THE DIFFERENCES OF FOOD PREFERENCES, FOOD CHOICES
AND ITS WASTE WITH NUTRITIONAL STATUS AMONG
STUDENTS RECEIVING SCHOOL SUPPLEMENTARY MEALS IN
KOTA BHARU, KELANTAN**

by

SITI HAJAR BINTI MOHD TOHAR

UNIVERSITI SAINS MALAYSIA

2024

**THE DIFFERENCES OF FOOD PREFERENCES, FOOD CHOICES
AND ITS WASTE WITH NUTRITIONAL STATUS AMONG
STUDENTS RECEIVING SCHOOL SUPPLEMENTARY MEALS IN
KOTA BHARU, KELANTAN**

by

SITI HAJAR BINTI MOHD TOHAR

**Dissertation submitted in partial fulfilment of the requirements for the
degree of Bachelor of Health Science (Honours) (Dietetic)**

July 2024

CERTIFICATE

This is to certify that Miss Siti Hajar Binti Mohd Tohar's dissertation, "The Association of Food Preferences and Food Choices And Its Waste With Nutritional Status Among Students Received School Supplementary Meals In Kota Bharu, Kelantan" is a true record of research conducted as a final year dietetics project under my supervision. I have evaluated this dissertation and feel it fits acceptable academic presentation standards, as well as being sufficient in scope and quality as a dissertation to be presented in partial completion of the degree Bachelor of Health Science (Honours) (Dietetics).

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.

Student,



.....

Final Year Dietetics Student

School of Health Sciences

Universiti Sains Malaysia

Health Campus

16150 Kubang Kerian

Kelantan, Malaysia.

ACKNOWLEDGEMENT

Praise be to Allah. I express my gratitude to Allah SWT for granting me the opportunity to successfully undertake and conclude this culminating academic endeavour, the Final Year Project with the title “The Differences of Food Preferences and Food Choices and Its Waste with Nutritional Status Among Students Received School Supplementary Meals in Kota Bharu, Kelantan.” The present report has been meticulously prepared in fulfilment of the academic requirements of the School of Health Sciences at University Sains Malaysia (USM), specifically designed for students in their final year pursuing the Bachelor of Health Science (Honours) in Dietetics program.

Firstly, I would like to extend my heartfelt appreciation to my project supervisor, Prof Madya Dr. Foo Leng Huat for his unwavering support, and guidance throughout the completion of my final year project. His constructive feedback and insightful suggestions have played a pivotal role in refining the quality of my work.

Deepest thanks and appreciation to my parents, family and friends for their unwavering encouragement and understanding. Their love and support have been my pillars of strength, empowering me to overcome challenges and persevere in the pursuit of academic excellence. The collaborative spirit and camaraderie within our academic community have enriched my learning experience. Finally, I am profoundly grateful for the opportunities and resources provided by University Sains Malaysia which have enabled me to grow academically and personally. This final year project marks not only the culmination of my undergraduate studies but also the beginning of a lifelong journey of learning and exploration. Thank you to everyone who has been a part of this remarkable chapter in my academic life.

CONTENTS

DECLARATION.....	2
ACKNOWLEDGEMENT	3
LIST OF TABLES.....	7
LIST OF FIGURES.....	8
LIST OF SYMBOLS	9
LIST OF ABBREVIATIONS	10
LIST OF APPENDICES.....	11
CHAPTER 1: INTRODUCTION.....	16
1.1 Background of the study	16
1.2 Problem Statement	21
1.3 Significance of Study	25
1.5 Research Objectives	28
1.5.1 General Objectives	28
1.5.2 Specific Objectives	28
1.6 Research Hypothesis.....	29
1.7 Conceptual Framework.....	31
CHAPTER 2: LITERATURE REVIEW	34
2.1 Malnutrition trend and Pattern in School-aged Children	34
2.2 Malnutrition and its Health Consequences	36
2.3 Factors associated with Malnutrition risk in school-aged children	37
2.3.1 Dietary Factors	39
2.4 Nutritional Importance of School Meals.....	40
2.5 Food preferences and choices of school-aged children	41
2.6 Impacts of school meals on nutritional status.....	44
CHAPTER 3: MATERIALS AND METHODS OR METHODOLOGY	47
3.1 Research Design	47
3.2 Study Area	48
3.3 Study Population.....	49
3.4 Subject Criteria.....	49
3.4.1 Inclusion Criteria.....	49

3.4.2 Exclusion Criteria	49
3.5 Sample size estimation	50
3.6 Sampling method and subject recruitment	51
3.7 Research tool	52
3.8 Operational definition	60
3.9 Data Collection Method	62
3.11 Data Analysis.....	65
3.15 Ethical considerations.....	66
3.15.1. Subject vulnerability.....	66
3.15.3. Privacy and confidentiality.	67
3.15.4. Community sensitivities and benefits.	68
3.15.5. Honorarium and incentives.....	69
CHAPTER 4: RESULTS	70
4.1 General characteristics.....	70
4.2: Degree of food preferences across a diverse range of food items within school environment between boys and girls.	74
4.4 Food waste portion based on non-preferred RMT dishes with nutritional status among students whom taking the school supplementary meals. (N=117)	86
4.5 The difference patterns between nutritional status and the preferred food items according to healthy and unhealthy classification among students.	87
4.6 The differences of food preferences with BMI status between boys and girls.	91
CHAPTER 5: DISCUSSION	93
5.1 General characteristics.....	93
5.2 Degree of food preferences across a diverse range of food items within school environment between boys and girls.	96
5.3 Individual choices of food among participants based on meals in RMT.....	101
5.4 Food waste portion based on non-preferred RMT dishes among students whom taking the school supplementary meals.	103
5.5 The difference patterns between nutritional status and the preferred food items according to healthy and unhealthy classification among students.	105
5.6 The difference of food preferences with BMI status between boys and girls	107
5.7 Limitation and Recommendations.....	110
CHAPTER 6: CONCLUSIONS	111
REFERENCES	113
APPENDICES	128
8.1 Questionnaire (Bahasa Melayu)	153
5.0 APPENDICES	174
5.1 Questionnaire (Malay).....	174

LIST OF TABLES

Table 3.7. 1: Construct table of preferred foods according to healthy and unhealthy food preferences.	57
Table 3.7. 2: Construct table of non-preferred foods according to healthy and unhealthy food preferences.	58
Table 4.1. 1: Sociodemographic characteristics of the respondents. (n=117).....	72
Table 4.1. 2: Degree of preferences of food among participants based on food groups.	77
Table 4.4. 1: Food waste portion of non-preferred RMT meals based on BMI status....	86
Table 4.5. 1: The differences of BMI status with preferred food items according to healthy and unhealthy classification.	89
Table 4.6. 1: The differences of food preferences with BMI status between boys and girls.	92

LIST OF FIGURES

Figure 1.7. 1: Conceptual framework of study	31
Figure 3.5. 1: Sample size of study by using Raosoft software	50
Figure 3.10. 1: Study Flowchart	64
Figure 4.3. 1: Percentages of students choosing different rice-based meals.	82
Figure 4.3. 2: Percentages of students choosing different noodle-based meals.....	83
Figure 4.3. 3: Percentages of students choosing different bread-based meals.....	84
Figure 4.3. 4: Percentages of students choosing different food items.	85

LIST OF SYMBOLS

n	Sample size
p	p- value

LIST OF ABBREVIATIONS

BMI	Body Mass Index
WHO	World Health Organization
SPSS	Statistical Package for Social Sciences
NCDs	Non- Communicable Diseases
NHMS	National Health and Morbidity Survey
NCCFN	National Coordinating Committee on Food and Nutrition

LIST OF APPENDICES

Appendix 1: Proof of access to questionnaires.	128
Appendix 2: Kementerian Pendidikan Malaysia (KPM) Approval.	129
Appendix 3: Jabatan Pendidikan Negeri Kelantan (JPKN) Approval.	130
Appendix 4: Ethical Approval from Human Research Ethics Committee USM.....	131
Appendix 5: School Permission to Conduct the Study.	132
Appendix 6: Advertisement for recruitment of participants.	133
Appendix 7: Informed Consent Form and Verbal.....	134
Appendix 8: Questionnaire of Food Preferences and Food Choices.	153

**PERKAITAN KESUKAAN MAKANAN DAN PEMILIHAN
MAKANAN DAN SISANYA BERSAMA STATUS INDEKS BERAT
BADAN (BMI) DALAM KALANGAN PELAJAR YANG
MENERIMA MAKANAN TAMBAHAN SEKOLAH DI KOTA
BHARU, KELANTAN.**

ABSTRAK

Pengenalan: Sekolah adalah persekitaran makanan yang penting untuk memupuk dan menggalakkan pilihan dan amalan makanan sihat di kalangan kanak-kanak dan remaja. Kajian ini bertujuan untuk mengenal pasti hubungan antara keutamaan makanan, pilihan makanan, dan pembaziran makanan dengan status pemakanan dalam kalangan pelajar yang menerima makanan tambahan di sekolah di Kota Bharu , Kelantan. **Kaedah:** Sekolah yang layak dipilih secara rawak dari senarai lengkap sekolah rendah awam di Kota Bharu, Kelantan yang diperolehi dari laman web Kementerian Pendidikan Malaysia. Ia melibatkan kajian keratan rentas yang dijalankan melalui soal selidik sendiri dalam kalangan 130 pelajar sekolah rendah. Peserta terdiri daripada 38.5% (45) lelaki dan 61.5% (72) perempuan. Peserta dipilih berdasarkan kriteria kemasukan seperti dibiayai kerajaan tanpa keperluan pendidikan agama dan khas, warganegara Malaysia, pelajar sekolah rendah lelaki dan perempuan berumur 7 hingga 12 tahun, menerima program makanan tambahan sekolah dan boleh memahami Bahasa Malaysia. Soal selidik terdiri daripada tiga bahagian: Bahagian Satu: Item sosiodemografi. Bahagian Dua: Keutamaan Makanan yang dikelaskan berdasarkan kumpulan makanan yang diperolehi daripada Piramid Makanan Malaysia dan dengan kumpulan makanan tambahan dalam keutamaan makanan seperti makanan segera, makanan diproses, makanan dan minuman manis, dan item makanan yang dipilih berdasarkan makanan yang paling biasa ditemui di persekitaran

sekolah sama ada dari kantin sekolah atau dibawa dari rumah ke sekolah.. Bahagian Tiga: Pilihan Makanan yang disediakan dalam makanan RMT dan pembazirannya yang merujuk kepada makanan yang tidak disukai dalam RMT. **Penemuan:** Penemuan ini mencabar persepsi umum bahawa individu yang berlebihan berat badan dan obes mempunyai kadar pengambilan makanan tidak sihat yang lebih tinggi. Sebaliknya, kajian ini mendedahkan bahawa individu yang mempunyai kurang berat badan yang makan makanan bergoreng lebih ramai daripada mereka yang berlebihan berat badan atau obes. Perbezaan jantina dalam keutamaan makanan juga jelas, dengan kanak-kanak perempuan menunjukkan pilihan makanan yang lebih pelbagai dan lebih sihat berbanding kanak-kanak lelaki, walaupun tiada perbezaan yang ketara dalam keutamaan makanan tidak sihat mengikut kategori BMI. Selain itu, kajian ini menyoroti tingkah laku pembaziran makanan, menunjukkan bahawa pelajar yang kurang berat badan membazirkan makanan kurang berbanding rakan sebaya mereka yang mempunyai berat badan normal dan berlebihan/obes.

DIFFERENCES OF FOOD PREFERENCES AND FOOD CHOICES AND ITS WASTE WITH NUTRITIONAL STATUS AMONG STUDENTS RECEIVED SCHOOL SUPPLEMENTARY MEALS

ABSTRACT

Introduction: Schools are an important food environment to cultivate and promote healthy food choices and practices among children and adolescents. This study aimed to identify the differences of food preferences and food choices and its waste with nutritional status among children students received school supplementary meals in Kota Bharu, Kelantan. **Methods:** Eligible schools were randomly selected from a complete list of public primary schools in Kota Bharu, Kelantan that was obtained from the Ministry of Education Malaysia's website. It involved a cross-sectional study that was conducted through a self-administered questionnaire among 130 school-aged children' participants. The participants consisted of 38.5% (45) males and 61.5% (72) females. The participants will be selected based on the inclusion criteria, such as government-funded with non-religious and special educational needs, Malaysian citizens, primary school student's male and female aged 7 to 12 years old, receive school supplementary meal program and able to understand Bahasa Malaysia. The questionnaire comprises three parts, Part One: Sociodemographic items, Part Two: Food Preferences which were classified based on food groups derived from Malaysian Food Pyramid and with the additional food groups in food preferences such as fast-food, processed foods, sugary foods and beverages and food items were chosen based on the most common foods found within school environment either from school canteen or brought from home to school, and Part Three: Food Choices that were provided within RMTs meals and its waste which refer from non-

disliked meals within RMTs. **Result:** The findings challenge the common perception that overweight and obese individuals have higher consumption rates of unhealthy foods. On the contrary, this study revealed that underweight individuals consume fried foods more than those who are overweight or obese. Gender differences in food preferences were evident, with girls showing more diverse and healthier food choices compared to boys, though no differences were found in unhealthy food preferences across BMI categories. Additionally, the study highlighted food waste behaviours, showing that underweight students waste less food compared to their normal and overweight/obese peers.

CHAPTER 1: INTRODUCTION

1.1 Background of the study

The most dynamic phase of a person's growth is childhood (Potempa-Jeziorowska et al., 2022). One of the most important aspects of human growth is nutrition, which was particularly significant in the early years of life. Children's physical, mental, and emotional development depended on acquiring enough nutrients, which laid the foundation for a long and healthy life. According to the Australian National Health and Medical Research Council (2013), children's healthy growth and development depended on receiving an optimal diet (National Health and Medical Research Council, 2013, p. 11). A well-balanced diet played a crucial role in ensuring that children received the necessary nutrients, vitamins, and minerals required for their physical and cognitive development. In addition to reaching and maintaining a healthy weight, this healthy diet also contributed to preventing chronic disease and early mortality (Dudley et al., 2015). On the other hand, sedentary lifestyles and inactivity, along with early-life improper eating—specifically, consuming excessive amounts of high-energy, low-nutrient foods and beverages—were risk factors for overweight and obesity (Khambalia et al., 2011; Chatterjee et al., 2020). These behaviors of unhealthy diets and a lack of physical activity were referred to as metabolic risk factors, and they had the potential to cause cardiovascular disease, the non-communicable disease (NCD) that caused the most premature deaths (World Health Organization (WHO), 2023). However, according to current scientific literature, many diseases could be avoided with the right behavioral

intervention strategies and identification of risk factors (Safaei et al., 2021). Refraining from excessive alcohol use, avoiding tobacco, engaging in regular exercise, and consuming healthy foods could bring about numerous health benefits, potentially preventing the onset of chronic diseases (Harvard T.H. Chan, 2023). Since eating patterns and behaviors tend to carry over and persist from childhood into adulthood, it was crucial to instill healthy eating habits at a young age (Neumark-Sztainer et al., 2011).

Malnutrition was regarded as a serious global issue affecting millions of children and adolescents worldwide, especially those from developing countries. Malnutrition referred to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients, which could result in diet-related noncommunicable diseases (NCD) (World Health Organization, 2021). For instance, malnutrition risk occurred when the body did not receive adequate nutrients to function properly and could manifest in two forms: undernutrition and overnutrition. However, overweight and obesity constituted significant risk factors for diet-related NCD (Owino, 2019). Poor diet emerged as the primary contributor to NCDs, surpassing the combined impact of tobacco use, alcohol consumption, and physical inactivity, marking it as the most substantial among the four major risk factors associated with these diseases (Hyseni et al., 2016). In 2022, it was anticipated that 149 million children under the age of five were stunted (too short for their age), 45 million were wasted (too thin for their height), and 37 million were overweight or obese worldwide (World Health Organization, 2023). In the emerging world, undernutrition was responsible for approximately half of deaths among children under the age of 5, with the majority occurring in low- and middle-income countries (World Health Organization, 2023). A growing body of evidence suggested that the prevalence of malnutrition comprising undernutrition such as wasting, stunting, and

underweight, and overnutrition for both overweight and obesity was an important issue and concern among school-aged children worldwide. Globally, reported by UNICEF in 2021, the prevalence of thinness between girls and boys aged 5-19 years old was 8.4% and 12.4%, respectively, while the prevalence of overweight among children aged 5-9 years old was 20.6%, and adolescents aged 10-19 years old was 17.3% (United Nations Children's Fund (UNICEF), 2021).

Unhealthy and improper dietary intake was widely regarded as a major determinant factor associated with an increased risk of malnutrition in growing children. The increased risk of malnutrition in this vulnerable population was a direct consequence of poor food preferences and choices and a lack of nutritional education. This problem was closely related to the growing industry of fast foods and processed foods, which had become increasingly popular due to their convenience and affordability, making them a common choice for families with busy schedules. These foods, which were frequently low in fiber, protein, and micronutrients and high in calories, added sugar, salt, and unhealthy fats, also posed a serious threat to public health and the environment due to their carbon emissions and water shortages (Popkin et al., 2021; Emeka & Muhammed, 2020). One study in Jos Metropolis, Plateau State, Nigeria, found that the prevalence of fast-food consumption among school-aged children in one week was 91.1% (Emeka & Muhammed, 2020). In Malaysia, a study found that about 86.9% of adolescents consumed fast food (Man et al., 2020). Due to factors including affordability, menu options, flavor, taste, and convenience, the consumption of fast food had been rising (Shah, 2014). Additionally, factors significantly linked with fast-food consumption among children included eating out per week, inadequate vegetable intake, and imbalanced intake of cereals or grains, meat, poultry, or eggs, which would be helpful to Malaysian

policymakers in encouraging adolescents to promote healthier eating choices (Man et al., 2021). When children consistently made poor food choices, these eating habits could lead to imbalances in macronutrients such as carbohydrates, proteins, and fats and lack important vitamins, minerals, and other essential nutrients necessary for optimal health, which would affect bodily functions. Thus, making poor choices could result in a decline in diet quality, eventually leading to malnutrition.

Several school nutritional intervention programs had been carried out to address the issue of malnutrition and promote healthier eating habits among school-aged children. Lower-income children could receive subsidized free or reduced-price meals through school meal programs, which were often means-tested (e.g., based on family income, eligibility for the Supplemental Nutrition Assistance Program [SNAP], etc.) (Cohen et al., 2021). Rancangan Makanan Tambahan (RMT) was the most well-known school feeding initiative in Malaysia. It offered free meals to low-income primary school kids. In addition to RMT, there were other initiatives including the parent-funded Hidangan Berkhasiat di Sekolah (HiTS). These interventions aligned with the UNICEF Nutrition Strategy 2020-2030, as its second objective was to prevent undernutrition, micronutrient deficiencies, and overweight among middle childhood and adolescence (United Nations Children's Fund (UNICEF), 2020, p. 27). UNICEF placed a priority on various aspects for the well-being of school-aged children, such as ensuring access to nutritious food in both school and non-school settings, fostering a healthy food environment, integrating nutrition education into school curricula, and promoting healthy dietary practices among school-aged children and adolescents (United Nations Children's Fund (UNICEF), 2021, p.14). In addressing the critical growth period for school-age children, especially in the context of Malaysia where insufficient and unhealthy eating

habits were prevalent, there was an urgent need for targeted interventions at the school level. This included implementing school feeding programs to address issues such as hunger among students and to ensure access to a balanced diet that fulfilled their nutritional requirements (Khalidi & Gen, 2020). Despite the comparatively lower morbidity and mortality risks for this age group, the health, development, and overall well-being of school-aged children and adolescents (5 to 14 years) had received insufficient attention, as highlighted by Vaivada et al. (2022). To address this gap, educators and health professionals played a pivotal role in promoting healthier eating habits among school-aged children. By evaluating students' food preferences and choices with nutritional status, these influencers could identify patterns that impacted the establishment of healthful habits.

1.2 Problem Statement

Malnutrition was a prevalent issue in low- and middle-income nations, particularly in regions like sub-Saharan Africa and Asia (Otiti & Allen, 2021). Even though Malaysia had achieved progress in healthcare and economic growth, it continued to grapple with significant malnutrition challenges (Tay et al., 2023), which raised serious concerns for public health. For example, the current study's findings demonstrated the prevalence of underweight, overweight/obesity, stunting, and anaemia in the sample population, indicating that malnutrition remained a significant public health concern in Kuala Lumpur, Malaysia (Tay et al., 2023). It was imperative to recognize that malnutrition extended beyond basic hunger, encompassing both undernutrition and overnutrition, leading to detrimental health consequences. Despite the implementation of various food aid programs to alleviate hunger, a substantial number of Malaysian children still experienced inadequate nutritional intake or poor diets. This indicated a deviation from meeting the objectives outlined in the National Plan of Action for Nutrition in Malaysia (NPANM III) and the United Nations' Sustainable Development Goals (SDGs) (Tay et al., 2023).

The concern of undernutrition among school-aged children was a pressing issue that demanded immediate attention. According to data from the World Health Organisation (WHO) for 2022, 149 million children worldwide were stunting, 45 million were wasting (WHO, 2023). In Malaysia, the previous report by the National Health and Morbidity Survey (NHMS) in 2019, for children aged 5 to 17, found that the prevalence of stunting, thinness, and underweight was 12.7%, 10.0%, and 15.4%, respectively.) Undernutrition negatively impacted cognitive abilities in school-aged children.

Malnourished children often experienced difficulties concentrating, learning, and retaining information due to reduced brain function caused by nutrient deficiencies. This was supported by a study showing that childhood neurodevelopment and intellectual success were negatively impacted by malnutrition, which had serious consequences for the chances and well-being of individuals afflicted in the future (Kirolos et al., 2022).

Apart from that, there was a concerning rise in the prevalence of overnutrition among school-aged children, manifesting as an increasing incidence of overweight and obesity. The escalating rates of childhood overweight and obesity posed significant health risks, leading to a range of immediate and long-term consequences, including a heightened risk of obesity, diabetes, chronic diseases, and an unprecedented burden on healthcare systems. Chronic obesity was associated with a range of health problems, including an increased risk of developing comorbid illnesses such as type 2 diabetes, cardiovascular disease (CVD), gastrointestinal disorders, joint and muscle disorders, respiratory difficulties, and psychological concerns (Fruh, 2017). Obesity hindered physical abilities and limited participation in physical activities. Children who were overweight often struggled with mobility, leading to decreased opportunities for exercise and social interaction. This sedentary lifestyle not only exacerbated weight gain but also hampered the development of essential motor skills. Moreover, obese children often experienced psychological issues such as low self-esteem and depression due to societal stigmatization and bullying (Reitz et al., 2020). These emotional challenges further contributed to a diminished sense of well-being. In terms of dietary habits, overnutrition among school-aged children was often linked to poor dietary habits that involved the consumption of high-calorie, low-nutrient foods and sugary beverages. High-calorie, low-nutrient foods such as fast-food items were easily accessible and

appealing to children due to their taste and convenience, making children more inclined to choose them over healthier options.

As mentioned above, it should be noted that the current trend of eating and lifestyle practices in school-aged children was concerning due to its negative impact on their health and well-being, particularly due to poor food preferences and choices. One of the most prevalent trends in school-aged children's eating habits was the consumption of fast food. According to a local research studies, children (Chong et al., 2016) weight status related to a higher frequency of snacking (Ong et al., 2023). In the United States, schoolchildren who were served French fries, comparable potato items, and desserts more than once a week in subsidized school meals had a notably greater risk of obesity (Fox et al., 2009). This similarity could be observed in various countries, regardless of their cultural and geographical differences. Factors such as globalization, busy lifestyles, and peer influence contributed to this alarming trend. In Malaysia, more than half (72.3%) of students skipped at least one meal each day, with breakfast being the most commonly skipped meal, followed by lunch and supper (Rezali et al., 2012). On the other hand, many school-aged children exhibited a notable lack of interest in, or access to, fruits and vegetables. Malaysian children ingested 0.91 and 1.07 servings of fruits and vegetables per day, on average. Less than one-fifth of the children (11.7% and 15.8%) met the daily required portions of fruits and vegetables (Chong et al., 2017). Long-term practices of this kind of food choice would lead to a decline in the consumption of essential nutrients such as vitamins, minerals, and fiber that are vital for children's growth and development. According to the NHMS 2022 key findings, 1 in 3 Malaysian teenagers aged 13-17 were overweight or obese, 4 in 5 were physically inactive, 2 in 3 led sedentary lives, 1 in 3 drank soft drinks every day, 1 in 10 ate fast food at least 3 days per week, and 4 in 5 did

not consume enough fruits and vegetables (NHMS, 2022). Changes in food habits and sedentary lifestyles were linked to an increase in obesity prevalence regardless of age, ethnicity, or socioeconomic class (Wafa & Ghazalli, 2020). This current trend of eating and lifestyle practices in school-aged children could eventually lead to malnutrition if left unaddressed. Therefore, this study aimed to assess students' food preferences and choices towards the better improvement of nutritional status in BMI levels in promoting healthful supplementary meals choices offered in school.