

# NATIONAL HEALTH AND MORBIDITY SURVEY 2017

# ADOLESCENT NUTRITION SURVEY

WP KUALA LUMPUR



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### **Contributors**

The following persons had contributed in the interpretation of findings, discussion on implication, conclusion and/or drawing recommendations for this report.

### **(In alphabetical order)**

Ainan Nasrina Ismail, Azli Baharudin, Chan Ying Ying, Chin Kim Ling, Cheong Siew Man, Fatimah Othman, Hazizi Abu Saad, Jamilah Ahmad, Junaidah Raib, Lai Wai Kent, Lalitha Palaniveloo, Ling Swee Nian, Mohd Azahadi Omar, Mahenderan a/l Appukutty, Mohamad Hasnan Ahmad, Mohamad Ihsan Tahir, Noor Ani Ahmad, Norlida Zulkafly, Nur Azna Mahmud, Nor Azian Mohd Zaki, Norazizah Ibrahim Wong, Noor Hasnani Ismail, Noor Ul-Aziha Muhammad, Nur Ili Mohamad Tarmizi, Nur Shahida Abdul Aziz, Poh Bee Koon, Rashidah Ambak, Rohana Ya'akof, Ruby Zainureen Zahedi, Ruhaya Salleh, Rusidah Selamat, Ruzita Abd Talib, Safiah Md Yusof, Sam Azura Ahmad, Shahrulnaz Norhazli Nazri, Syafinaz Sallehuddin, Subash Shander a/l Ganapathy, Suhaidi Sudin, Tan Beng Chin

### **Editorial Reviewers**

Fazly Azry Abdul Aziz

### **Editors**

Ruhaya Salleh, Tahir Aris, Muhammad Fadhli Mohd Yusoff

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Perpustakaan Negara Malaysia

Cataloging-in-Publication Data

National Health and Morbidity Survey 2017 (NMRR-16-698-30042)

ISBN 978-983-2387-57-2

MOH/S/IKU/89.18(RR)

**Suggested citation:**

Institute for Public Health (IPH) 2017. National Health and Morbidity Survey (NHMS) 2017: Adolescent Nutrition Survey 2017, Malaysia.

**Disclaimer:**

The views expressed in this report are those of the authors alone and do not necessarily represent the opinions of the other investigators participating in the survey, nor the view or policy of the Ministry of Health.

**Produce and Published by:**

The National Health and Morbidity Survey 2017: Adolescent Nutrition Survey 2017

Institute for Public Health

National Institutes of Health

Ministry of Health Malaysia

Jalan Bangsar

50590 Kuala Lumpur, Malaysia

Tel: +603-22979400 / 521

Fax: +603-22823114

Website: [www.iku.gov.my](http://www.iku.gov.my)

**Any enquiries about this report should be directed to:**

Principal Investigator

National Health and Morbidity Survey 2017: Adolescent Nutrition Survey 2017

Institute for Public Health

National Institutes of Health

Ministry of Health Malaysia

Jalan Bangsar

50590 Kuala Lumpur, Malaysia

Tel: +603-22979400

Fax: +603-22823114

Website: [www.iku.gov.my](http://www.iku.gov.my)

Published by Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia.

## **Acknowledgement**

The authors would like to thank the Director General of Health Malaysia and the National Health and Morbidity Survey (NHMS) Steering Committee Team for supporting this research project via financial grant and technical support. The research team member also would like to express their gratitude to the Director General Education, Ministry of Education, Malaysia as well as Director of Nutrition and other staff at Nutrition Division, Food Safety & Quality Division and the Ministry of Health for the input given.

The Adolescent Nutrition Survey would not have been completed without the commitment and dedication shown by the Ministry of Education in conducting this study at selected schools nationwide. We specifically thanks the State Education Department, Principals, Headmasters, teachers, students and parents for their excellent cooperation and commitment throughout the study.

The authors wish to extend our gratitude to all research team members. We are deeply indebted to the staff the Institute for Public Health, State Health Department, State and Distrit Nutritionist and our committed research assistants who contributed greatly to this study. Without their support and commitment, this study would not have come this far.

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## Executive Summary

The Adolescent Nutrition Survey (ANS) is the second nation-wide study among adolescents in Malaysia after the Malaysia School-based Nutrition Survey (MSNS) 2012. There are three main scopes in this survey which are Adolescent Nutrition Survey (ANS), Habitual Food Intake and Dietary Intake. ANS consists of six topics such as nutritional status, body weight perception, meal pattern, physical activity, vitamin/mineral, food supplement intakes and food and nutrition labelling. This survey was conducted at 311 randomly selected schools in all states including three federal territories in Malaysia. This school-based survey was a cross-sectional study involving school-going adolescents aged Primary 4 To Secondary 5 attending school in Malaysia. A multistage stratified cluster sampling design was used to recruit national representative samples from students in Standard 4 to 6 (10-12 years of age) and Form 1 to 5 (13-17 years of age). The survey was conducted using self-administered questionnaires. Total response rates for self administered questionnaire were 89.5% for ANS.

Based on the indicator height for age (HAZ), the prevalence of normal height ( $HAZ \geq -2SD$ ) was 94.0% and stunting was 6.0%. In terms of BMI for age (BAZ), the prevalence of thinness was 7.4%, overweight was 16.7 % and obesity was 15.8%.

Among those school-going adolescents who had actual normal weight, 50.9% correctly perceived their weight to be normal. Among those who were actually thin, 68.2% correctly perceived their weight to be thin, while among those who were actually overweight and obese, 48.3% and 21.2% correctly perceived themselves to be overweight and obese respectively. Health was the main reason among those who wanted to lose and gain weight; with 61.4% preferring exercise as an option to lose weight; 60.7% wanted to increase quantity of food to gain weight.

As for meal pattern, the prevalence of breakfast intake for seven days per week among adolescents was 29.8%. More than half, one to six days per week (57.5%) and some of them did not having breakfast in a week (12.7%). Among those who had breakfast, 70.5% had it at home. Boys (31.8%) reported having breakfast daily (seven days per week), higher than girls areas (27.8%). The two main reasons of skipping breakfast were no appetite (39.4%) and no time (35.5%).

The prevalence of having lunch seven days per week among school-going adolescents was 49.5%; 46.7% had lunch up to six days per week and 3.7% did not have lunch in a week. No appetite (41.2%) and no time (19.5%) were the two main reasons for skipping lunch. As for dinner, 61.6% of school-going adolescents had dinner seven days per week, 35.6% 1-6 days per week and 2.8% did not have dinner in a week. Only 7.3% took heavy meals after dinner seven days per week.

There were 1.9% who had fast food daily and 15.5% did not have fast food in a week. Social media (YouTube, Facebook, Instagram, etc.) and television were reported as the main sources which affected dietary pattern in 39.7% and 29.6%. A percentage of 33.8% reported that their dietary patterns were not affected by any media sources.

For dietary intake, the median energy intake of adolescents was 1848 kcal, which was 90.2% of the Recommended Nutrient Intake (RNI) for energy. Boys reported higher median energy intake with 2068 kcal compared to girls (1670 kcal). Half of the total daily energy intake consisted of carbohydrate (51.6%), protein (15.0%) and fat (33.4%). The total daily energy intake was derived from three main meals: breakfast (20.8%), lunch (26.0%) and dinner (25.7%).

The prevalence of physical activity among school-going adolescents in WP Kuala Lumpur was 42.7%. Boys and younger adolescents were more active than girls and older adolescents. The most favourite activities during spare time were walking for exercise, jogging / running, badminton, tagging and cycling. More adolescents watched television, played computer or video games over the weekend compared to schooling days.

The prevalence of vitamin/minerals and food supplements intake among Kuala Lumpur adolescence was 44.3% and 33.2%. There was no significant difference of vitamin/mineral and food supplement intakes between boys and girls, ethnicity, school classes and localities. In average, the vitamin/mineral and food supplements were consumed everyday by 14.6% and 9.2% of adolescents. The most commonly consumed vitamin/ minerals and food supplements were Vitamin C 31.9% and Bee product 13.5%. The main reason for taking vitamin/minerals and food supplements was due to parent's advised, which was 46.3% and 28.2% respectively.

Food and nutrition labelling use was assessed among secondary school-going adolescents; 30.7% always reading food and nutrition labelling. Another 49.8% reported as sometimes and only 19.6% never reading food label. They were more concerned about fat and total energy compared to other nutrients. 44.6% of adolescents both answered correctly on nutrition facts and 21.6% of adolescents answered correctly questions regarding the front of pack labelling and only 6.4% answered both correctly regarding the most and least ingredients based on the food ingredient list.

## 1.0 Introduction

Adolescence is a period of transition between childhood and adulthood. The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19 (WHO, 2014). Adolescence is a critical period because major biological and psychological changes occur during a very short period of time.

Adolescent health should be given attention because adolescents are the future generation of any country and their health statuses are critical for the well-being of society. Chronic malnutrition is one of the major health problems encountered by adolescents living in developing countries (World Health Organization, 2006). The high rate of malnutrition in girls not only contributes to increased morbidity and mortality associated with pregnancy and delivery but also to increased risk of delivering low birth-weight babies (World Health Organization, 2006). This contributes to the intergenerational cycle of malnutrition.

The nutritional issue in adolescents should be prioritized because growth during adolescence is at a fast pace. Adequate nutrition during adolescence is important to cover the deficits suffered during childhood. Moreover, extra micro and macro-nutrients are required to meet the demands of physical and cognitive growth, as well as provide adequate stores of energy for illnesses and pregnancy. To a more important extent, epidemiological evidence proved that there is a link between child and adolescent poor nutritional status and increased risk of various chronic diseases during adulthood (Case, Fertig, & Paxson, 2005).

Due to the targets of the first Millennium Development goal to "eradicate extreme poverty and hunger, the underweight prevalence in children was projected to decline from 26.5% in 1990 to 17.6% in 2015 across the world and specifically in developing regions; the prevalence was forecasted to decline from 30.2% to 19.3% (Onis, Blossner, Borghi, Frongillo, & Morris, 2004). Undernutrition rate in Malaysian children also showing a decreasing pattern. Data from the Third National Health and Morbidity Survey (NHMS III) 2006 in Malaysia found that the prevalence of underweight, stunted and thinness in children below 18 years old were 13.2%, 15.8% and 7.8% respectively (Institute of Public Health (IPH), 2008). However, these conditions were generally improved when NHMS 2015 showed that the prevalence of underweight, stunting and thinness were reduced to 13.0%, 13.4% and 7.8% respectively (IPH, 2015). NHMS 2011 reported that the national prevalence of thinness among adolescents specifically was 9.7% (IPH, 2011)

Recently, a systematic review reported that the prevalence of overweight and obesity among adolescents worldwide is high, and obesity is higher among boys (Bibiloni, Pons, & Tur, 2013) and Malaysia is showing a similar pattern as well. The prevalence of obesity among children was only 5.7% in the year 2006 (IPH, 2008) and it drastically increased to 11.9% in the year 2015 (IPH, 2015). NHMS in the year 2011 showed that the nationwide prevalence of obesity in adolescent age 10 – 17 was 5.7% (IPH, 2011).

High-calorie intake and sedentary lifestyle are two common behavioral factors related to childhood obesity. Childhood and adolescent obesity are an epidemic and should be given attention because they are associated with various medical chronic conditions in adulthood (Sahoo et al., 2015). Reading food labelling prior to food purchasing can help adolescents in making healthier choices on packaged snacks. However, use of nutritional labelling was found to be low among adolescents (Wojcicki & Heyman, 2012). Thus, Adolescent Nutrition Survey NHMS 2017 aims age 10 – 17 years old to continue exploring issues pertaining to nutrition related component in adolescents in Malaysian such as nutritional status, body weight perception, meal pattern, habitual food intake, dietary intake, physical activity level, vitamin/mineral and food supplement intake and food and nutrition labelling.

## References

1. Bibiloni, M. del M., Pons, A., & Tur, J. A. (2013). Prevalence of overweight and obesity in adolescents: A systematic review. *ISRN Obesity*, 2013, 392747.  
<https://doi.org/10.1155/2013/392747>
2. Case, A., Fertig, A., & Paxson, C. (2005). The lasting impact of childhood health and circumstance. *Journal of Health Economics*, 24(2), 365–389.  
<https://doi.org/10.1016/j.jhealeco.2004.09.008>
3. Institute for Public Health (IPH) 1996. The second National Health and Morbidity Survey (NHMS II) 1996, Health Related Behaviours. Ministry of Health, Malaysia.
4. Institute for Public Health (IPH) 2008. The third National Health and Morbidity Survey (NHMS III) 2006, Nutritional Status. Ministry of Health, Malaysia.
5. Institute for Public Health (IPH) 2011. The National Health and Morbidity Survey 2011 (NHMS 2011). Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
6. Institute for Public Health (IPH) 2015. The National Health and Morbidity Survey 2015 (NHMS 2015). Vol. II. Non-Communicable Diseases, Risk Factors & Other Health Problems; 2015.
7. Onis, M. De, Blossner, M., Borghi, E., Frongillo, E. a, & Morris, R. (2004). Estimates of Global Prevalence of Childhood Underweight in 1990 and 2015. *Journal of the American Medical Association*, 291(21), 2600–6.  
<https://doi.org/10.1001/jama.291.21.2600>



8. Sahoo, K., Sahoo, B., Choudhury, A. K., Sofi, N. Y., Kumar, R., & Bhadoria, A. S. (2015). Childhood obesity: causes and consequences. *Journal of Family Medicine and Primary Care*, 4(2), 187–92. <https://doi.org/10.4103/2249-4863.154628>
9. Wojcicki, J. M., & Heyman, M. B. (2012). Adolescent nutritional awareness and use of food labels: results from the National Nutrition Health and Examination Survey. *BMC Pediatrics*, 12(1), 55. <https://doi.org/10.1186/1471-2431-12-55>
10. World Health Organization. (2006). *Adolescent Nutrition: A Review of the Situation in Selected South-East Asian Countries*. Regional Office for South-East Asia, New Delhi. New Delhi. <https://doi.org/10.3126/hprospect.v10i0.5656>
11. World Health Organization. (2014). *Recognizing adolescence*. Retrieved July, 23, 2017 from <http://apps.who.int/adolescent/second-decade/section2/page1/recognizing-adolescence.html>

## **1.1 Objectives**

### **1.1.1 General Objectives**

To determine the prevalence of nutritional status, body weight perception, habitual food intake, dietary intake, meal pattern, physical activity level, vitamin/mineral and food supplements and food and nutrition labelling among adolescents in Malaysia.

### **1.1.2 Specific Objectives**

1.1.2.1 To determine the prevalence of nutritional status among of adolescents (Standard 4 to Form 5).

1.1.2.2 To assess self-perception on body weight and intentions on weight management among adolescents (Primary 4 to Secondary 5).

1.1.2.3 To determine the meal pattern among of adolescents (Primary 4 to Secondary 5).

1.1.2.4 To assess physical activity pattern of adolescents (Primary 4 to Secondary 5).

1.1.2.5 To determine the pattern of use of vitamin/mineral and food supplements among adolescents (Primary 4 to Secondary 5).

1.1.2.6 To determine the prevalence of reading food and nutrition labeling among adolescents (Secondary 1 to Secondary 5).

## **1.2 The NHMS 2017 Organisation Team**

The organisation of NHMS 2017 was set up at various levels of the Ministry of Health and Ministry of Education in order to conduct this survey.

### **1.2.1 NHMS Steering Committee**

The NHMS Steering Committee, chaired by the Director-General of Health was set up at the national level to approve scopes of the NHMS 2015-2018 and to facilitate implementation of the survey. The members and terms of reference of this committee are shown in **Appendix 1** and **Appendix 2**.

### **1.2.2 Central Coordinating Team (CCT)**

A working committee within the Institute for Public Health was established to coordinate implementation of the survey according to the scheduled Gantt chart. The Operation Centre was set up and led by the CCT team for coordinating and monitoring progress of the survey.

The list of CCT members and terms of reference are shown in **Appendix 3** and **Appendix 4**. **Figure 1** detailed the organisation chart at the Institute for Public Health level. Adolescent Nutrition Survey was part of NHMS 2017 using the sample from primary and secondary schools.

### **1.2.3 Research Team Members**

Research team members for each sub-scope were established and headed by a key-person (among IPH officers) together with the relevant stakeholders and universities. Research team members were responsible for the technical input in development of the questionnaire manual, variable definition, data analysis and writing of the final report.

The list of members for each research teams are shown in **Appendix 5**.

### **1.2.4 State Liaison Officers and Data Collection Team**

A State Liaison Officer (Nutritionist) was appointed in each State to facilitate planning and implementation of data collection within the States. The list of State Liaison Officers and Data Collection Teams are shown in **Appendix 6**.

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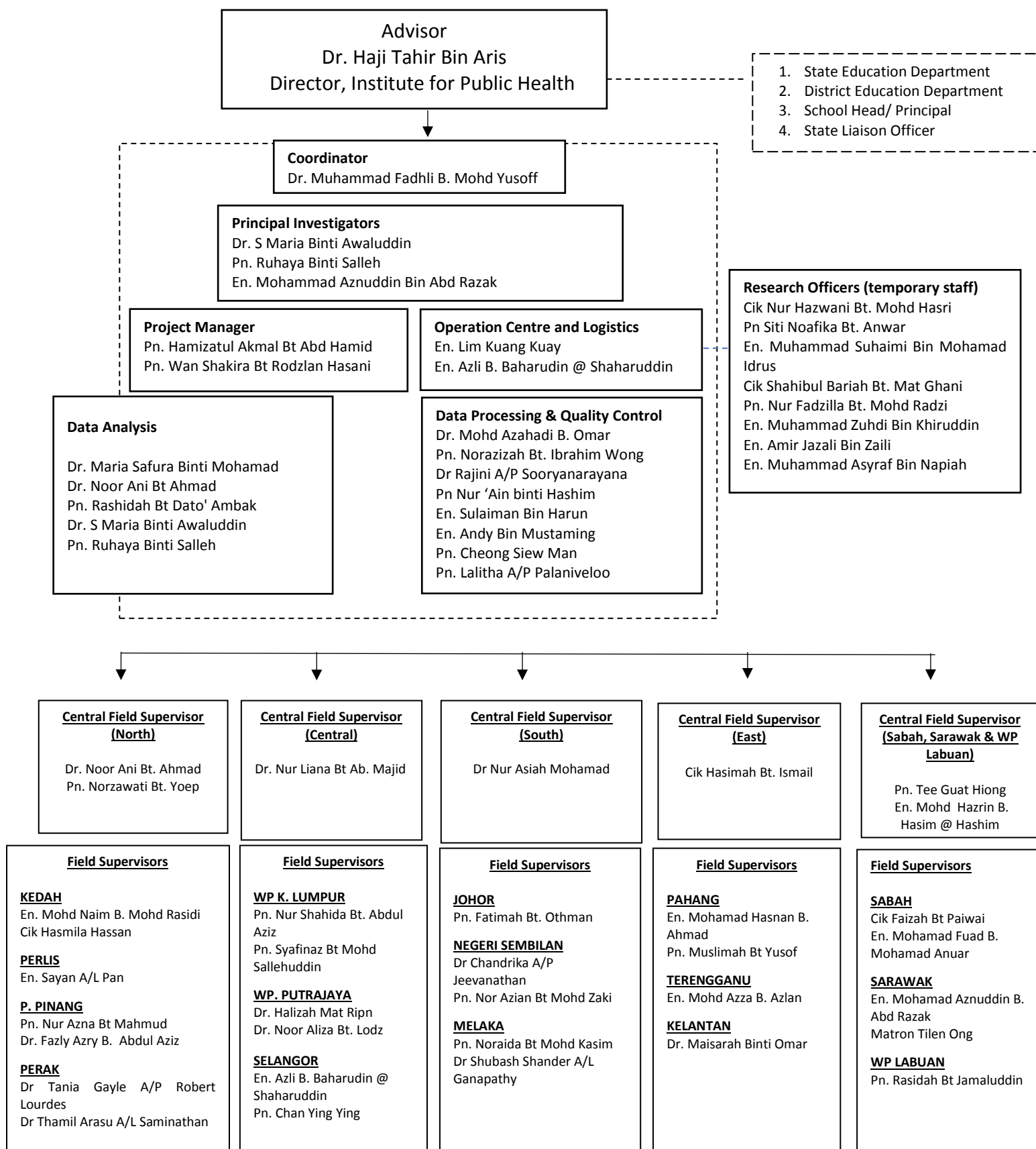


Figure 1: Organisation chart for data collection teams NHMS 2017

## 2.0 Methodology

### Methodology and Sampling Design

Three main scopes of research were incorporated in the survey, namely the Adolescent Nutrition Survey (ANS), Habitual food intake and Dietary Intake.

### 2.1 Target Population

Generally, the Adolescent Nutrition Survey 2017 was conducted at all 16 states including three federal territories in Malaysia. This school-based survey was a cross-sectional study involving school-going adolescents aged 10 to 17 years old attending public and private schools.

### 2.2 Sampling Frame

The sampling frame in this survey was a list of primary and secondary schools from the Ministry of Education. Students' enrolment data of 2016 from Standard 4 until Standard 6 (primary school) and Form 1 until Form 5 (secondary school) were used. There were 7926 primary schools and 2688 secondary schools in 2016. Both public and private schools were included in the sampling frame.

### 2.3 Sample Size Determination

Sample size was calculated using a single proportion formula for estimation of prevalence.

$$n_{SRS} \geq \frac{Z^2_{\alpha/2} (p)(1-p)}{e^2}$$

The sample size calculation was based on a few criteria as below:

1. Variance of proportion of the variable of interest (Based on Malaysia School-Based Nutrition Survey 2012)
2. Margin of error (e) (Between 0.01 to 0.05)
3. Confidence Interval of 95%

To ensure optimum sample size, a few adjustments were made as follows:

1. Adjusted  $n(srs)$  for the total number of target population (N) (based on the population size for schoolchildren in 2016)

$$n \geq \frac{n_{SRS}}{1 + \frac{n_{SRS}}{N}}$$

2. Adjusted for the design effect (deff) (based on previous survey: MSNS 2012),  $n(\text{complex}) = n * \text{deff}$
3. Adjusted the  $n(\text{complex})$  taking into account expected non-response rate of 25%,  $n(\text{adj}) = n(\text{complex}) * (1 + \text{non-response rate})$

4. The sample size was then adjusted according to the need of the analysis, whether the estimate was going to be done at the national or the state level.

Based on the requirements for the objectives and abovementioned considerations, the optimum sample size required was 30,496 respondents for secondary schools and 14,000 respondents for primary schools (**Table 2.1**).

**Table 2.1: Distribution of Secondary and Primary Schools Sampled by State, NHMS 2017**

No.	State	Secondary			Primary		
		Total Number of Schools	Number of Schools Sampled	Number of students sampled	Total Number of Schools	Number of Schools Sampled	Number of students sampled
1	Johor	306	14	1906	921	6	875
2	Kedah	219	14	1906	552	6	875
3	Kelantan	193	14	1906	423	6	875
4	Melaka	87	14	1906	236	6	875
5	Negeri Sembilan	139	14	1906	352	6	875
6	Pahang	209	14	1906	543	6	875
7	Pulau Pinang	141	14	1906	275	6	875
8	Perak	275	14	1906	852	6	875
9	Perlis	33	14	1906	73	6	875
10	Selangor	345	14	1906	727	6	875
11	Terengganu	162	14	1906	354	6	875
12	Sabah	246	14	1906	1,090	8	875
13	Sarawak	220	14	1906	1,274	7	875
14	WP Kuala Lumpur	133	14	1906	227	6	875
15	WP Labuan	19	8	1906	12	6	875
16	WP Putrajaya	11	8	1906	14	6	875
<b>Total</b>		<b>2,738</b>	<b>212</b>	<b>30,496</b>	<b>7,925</b>	<b>99</b>	<b>14,000</b>

## 2.4 Sampling Design

This survey implemented a multistage stratified cluster sampling design to ensure nationally representative sample of Standard 4 to 6 (10-12 years of age) and Form 1 to 5 (13-17 years of age). Malaysia was stratified into 16 states (including Federal Territory of Kuala Lumpur, Putrajaya and Labuan). The first stage of sampling involved a random selection of school from list of eligible schools provided by Ministry of Education. Schools were selected randomly with probability proportional to school enrolment size. A total of 311 schools were selected to participate in this survey. The second stage of sampling was selection of classes. All classes in each selected school were included in the sampling frame. Systematic random sampling was

used to select classes from each selected school. All students in the selected classes were eligible to participate in the survey. The third stage of sampling was applied for Habitual food intake module and Dietary Intake. Students were selected randomly from each selected class.

### **2.5 Ethical Approval**

This study was approved by the Ministry of Health, Research and Ethics Committee and Ministry of Education Ethics Committee. Approval was also obtained from the relevant Ministry of Education officials at the state and district levels including the selected school itself. Prior to the survey, several meetings with the relevant Ministry of Education officers and person in-charge at the selected school were carried out. Consent form were obtained from parents and the students.

### **2.6 Data Collection**

A total 36 teams were set up, 4 teams for Sabah and Sarawak and the remaining states 2 teams per state. They consist of a field supervisor, research assistants and a driver. The field supervisor was a permanent staff in Ministry of Health.

An initial data collection by the core team members was initiated to observe the flow of data collection on 06 March 2017. The data collection training was conducted for Peninsular in Kuala Lumpur and Sabah, Sarawak and WP Labuan in Kuching, Sarawak simultaneously. Data collection was conducted from 26 March to 03 May 2017.

### **2.7 Data Management**

Quality check on data was conducted throughout the survey based on specific identification (ID) numbers; from the state ID until individual student ID (generated for the study). Upon completing the survey, each student placed his / her answer sheet in an envelope. All answer sheets from the same school were wrapped together to make a bundle. These bundles were collected by assigned drivers for schools in Peninsular Malaysia or using tracked postage for schools in Sabah, Sarawak and WP Labuan.

#### **2.7.1 Data Operation Centre**

An operation centre with several stations was set up to receive data “bundles” from the field:

Station 1: Respondent ID checking

Station 2: Scanning

Station 3: Verification

Station 4: Storage

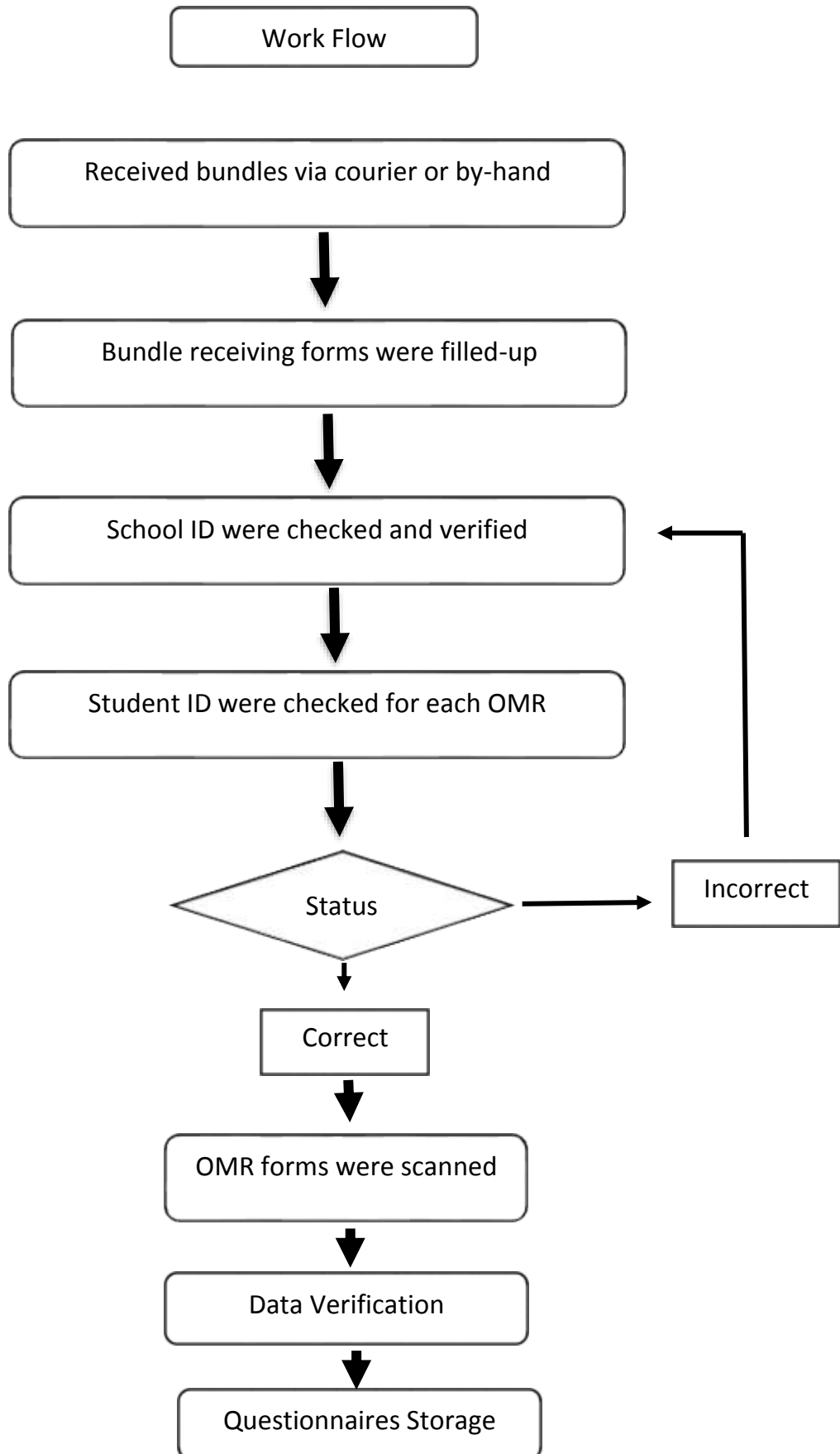


Figure 2: Work Flow of NHMS 2017



### 2.7.2 Data Analysis

The data set was checked, cleaned and edited for inconsistencies. Data analysis was done using SPSS version 21 by importing the raw dataset which normally in CSV form or excel. The analysis was done according to the objectives, and dummy tables prepared. Complex samples analysis procedures were used in the analysis and was carried out at 95% confidence interval. Finally, the data is representative of all students attending school from Standard 4 to Form 5 in Malaysia.

A weighting factor was applied to each student record to adjust the varying probabilities of selection and for the non-response. The weight used for estimation is given by:

$$W = W1 \times W2 \times W3 \times F \times PS$$

Where;

W1 = the inverse of the probability of selecting the school

W2 = the inverse of the probability of selecting the class within the school

W3 = the inverse of the probability of selecting the student within the class

F = the inverse of a school, class and student level non-response adjustment factor

PS = a post stratification adjustment factor calculated by class and gender

### 2.8 Survey Instruments

Validated self-administered questionnaires with computer-scanned answer sheets were used. Students' privacy was ensured as the answer sheet were anonymous. The majority of the students completed the survey within two class periods.

The ANS questionnaire contained sub topic which is nutritional status, body weight perception, meal pattern, physical activity level, Vitamin/Mineral and Food Supplement and Food and Nutrition Labelling.

### 3.0 Findings

#### 3.1 General Findings

A total of 40,087 questionnaires for adolescent nutrition survey were completed by the respondents. The school and class response rate was 100% respectively, while the student response rate for adolescent nutrition survey was 89.5%. Overall, the response rate was 89.5% (**Table 3.1.1**).

**Table 3.1.1: Response Rate at Student Level for Adolescent Nutrition Survey by State, NHMS 2017**

State	Selected School	Eligible Student	Interviewed Student	Response Rate (%)
<b>Malaysia</b>	<b>311</b>	<b>44,773</b>	<b>40,087</b>	<b>89.5</b>
Johor	20	2,829	2,565	90.7
Kedah	20	2,790	2,490	89.2
Kelantan	20	2,776	2,464	88.8
Melaka	20	2,862	2,685	93.8
Negeri Sembilan	20	2,823	2,431	86.1
Pahang	20	2,822	2,563	90.8
Pulau Pinang	20	2,846	2,547	89.5
Perak	20	2,832	2,527	89.2
Perlis	20	2,869	2,496	87.0
Selangor	20	2,721	2,503	92.0
Terengganu	20	2,738	2,437	89.0
Sabah	22	2,855	2,437	85.4
Sarawak	21	2,791	2,534	90.8
WP Kuala Lumpur	20	2,699	2,410	89.3
WP Labuan	14	2,789	2,525	90.5
WP Putrajaya	14	2,731	2,473	90.6

Comparison of total estimated population (weighted) with the national school enrolment is shown in **Table 3.1.2** Geographic information system (GIS) on the mapping of selected primary and secondary schools is shown in **Figure 3**.

**Table 3.1.2: Comparison between NHMS 2017 respondents and national enrolment of school students in Malaysia 2017**

	NHMS 2017			School Enrolment 2017	
	n	Estimated Enrolment (weighted)	Prevalence (%)	Total Enrolment	Prevalence (%)
<b>MALAYSIA</b>	40087	3,480,500	100	3,480,439	100
<b>State</b>					
Johor	2565	439,369	12.6	439,406	12.6
Kedah	2490	250,426	7.2	250,388	7.2
Kelantan	2464	207,201	6	207,206	6
Melaka	2685	106,254	3.1	106,253	3.1
Negeri Sembilan	2431	139,235	4	139,242	4
Pahang	2563	174,713	5	174,721	5
Pulau Pinang	2547	178,446	5.1	178,453	5.1
Perak	2527	281,354	8.1	281,352	8.1
Perlis	2496	38,004	1.1	37,999	1.1
Selangor	2503	651,976	18.7	651,925	18.7
Terengganu	2437	158,658	4.6	158,645	4.6
Sabah	2437	331,295	9.5	331,298	9.5
Sarawak	2534	321,046	9.2	321,063	9.2
WP Kuala Lumpur	2410	177,937	5.1	177,902	5.1
WP Labuan	2525	9,604	0.3	9,602	0.3
WP Putrajaya	2473	14,982	0.4	14,984	0.4
<b>Sex</b>					
Male	19677	1,746,339	50.2	1,746,326	50.2
Female	20410	1,734,161	49.8	1,734,113	49.8
<b>Form</b>					
Standard 4	4617	448,352	12.9	448,329	12.9
Standard 5	4205	442,371	12.7	442,339	12.7
Standard 6	3777	443,262	12.7	443,262	12.7
Form 1	5702	450,996	13	451,024	13
Form 2	5499	426,921	12.3	426,908	12.3
Form 3	5834	431,004	12.4	431,043	12.4
Form 4	5536	414,703	11.9	414,653	11.9
Form 5	4917	422,891	12.2	422,881	12.2

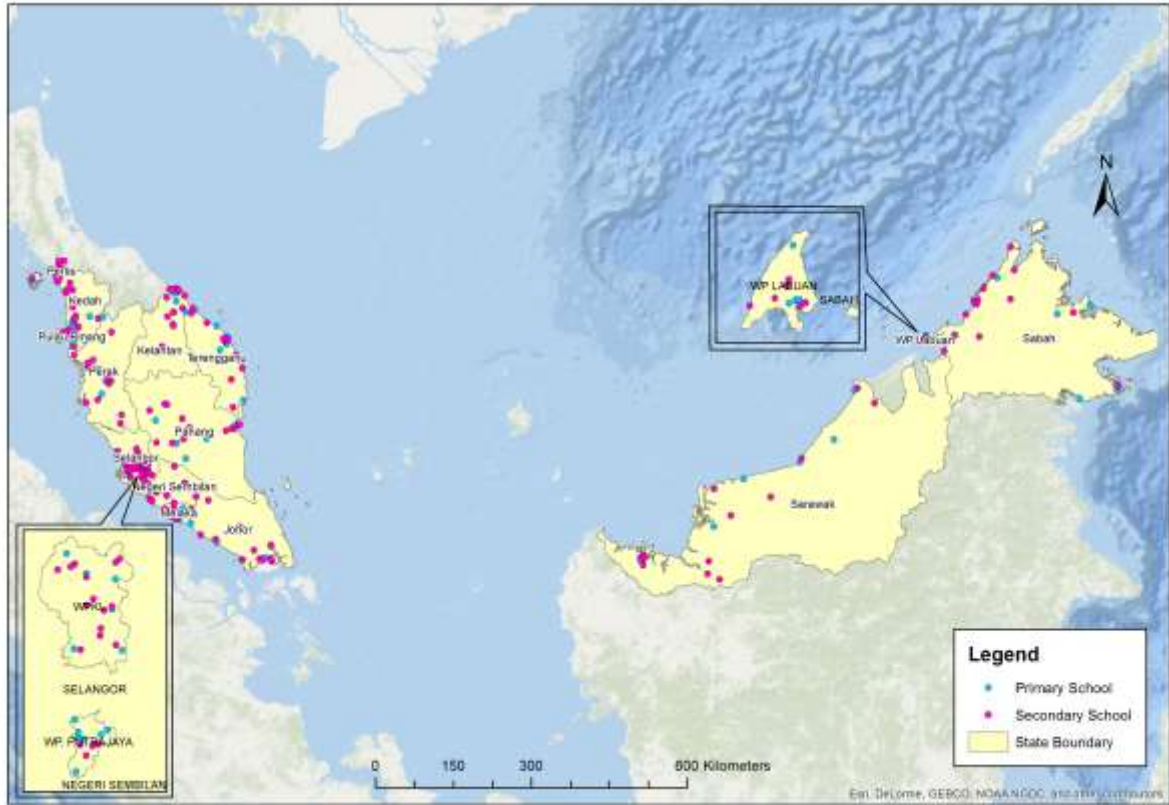


Figure 3: GIS mapping of the selected primary and secondary schools in Malaysia 2017

### 3.2 Nutritional status among adolescents (Primary 4 to Secondary 5) in WP Kuala Lumpur

**Contributors:** Azli Baharudin, Junidah Raib, Chan Ying Ying, Poh Bee Koon, Tan Beng Chin, Suhaidi Sudin, Mohamad Hasnan Ahmad

#### 3.2.1 Introduction

Good nutritional status contributes to healthy development of children. Anthropometric measurements are part of nutritional status components to assess body size and composition; and reflect adequate, inadequate or excessive food intake. It is also a reflection of individual activity level and disease states. Nutritional deprivation and excess may coexist, not only within household or the community but also across the country. Performing simple body measurements also helps to identify individuals, families or the community for intervention, which could improve not only nutritional status but also their health as a whole.

#### 3.2.2 Objectives

##### General objective:

To determine the nutritional status of adolescents (Primary 4 to Secondary 5).

##### Specific objective:

To determine the prevalence of stunting, thinness, normal weight, overweight and obesity among adolescents (Primary 4 to Secondary 5) in WP Kuala Lumpur according to socio-demographic characteristics.

#### 3.2.3 Variable definition

The nutritional status of adolescents was identified based on the World Health Organization Growth Reference 2007 (WHO 2007)<sup>1</sup>. The major indices referred to were:

- a. Height-for-Age z-score (for adolescents between (Primary 4 to Secondary 5), and
- b. BMI-for-Age z-score (for adolescents between Primary 4 to Secondary 5)

#### 3.2.4 Findings

##### 3.2.4.1 Height-for-Age z-score

The finding of the survey showed that 94.0% (95% CI: 91.32, 95.85) of the adolescents had normal height-for-age status (HAZ:  $\geq -2SD$  to  $< +2SD$ ). The prevalence was higher than national level [91.8% (95% CI: 91.19, 92.29)]. Comparing between sexes, girls had higher percentage of total stunting [7.8% (95% CI: 5.16, 11.51)] compared to boys [4.3% (95% CI: 2.85, 6.54)]. In term of class category, primary level had higher percentage of total stunting [7.3% (95% CI: 3.41, 14.78)] compared to secondary level [5.3% (95% CI: 4.00, 7.04)].

### 3.2.4.2 BMI-for-Age z-score

In terms of BMI-for-age status, the findings showed that 60.2% (95% CI: 57.31, 62.96) of the population was in the normal range ( $\geq -2SD$  to  $< +1SD$ ). The prevalence was lower than national level [62.9% (95% CI: 61.84, 64.02)]. Comparing between sexes, more boys [8.6% (95% CI: 6.87, 10.65)] were thinner than girls [6.1 (95% CI: 4.78, 7.83)]. In term of class category, primary level had higher percentage of thinness [8.5% (95% CI: 7.36, 9.80)] compared to secondary level [6.7% (95% CI: 5.45, 8.21)].

On the other hand, the prevalence of overweight in WP Kuala Lumpur (BMI-for-age:  $> +1SD$  to  $\leq +2SD$ ) was 16.7% (95% CI: 14.63, 18.94). The state prevalence was higher than national prevalence [15.6% (95% CI: 15.06, 16.19)]. In term of sexes, boys had slightly higher prevalence of overweight [17.0% (95% CI: 13.90, 20.64)] than girls [16.3% (95% CI: 14.04, 18.91)]. According to class category, primary level had higher prevalence of overweight [17.7% (95% CI: 14.75, 21.13)] compared with secondary level [16.1% (95% CI: 13.46, 19.05)].

For the prevalence of obesity (BMI-for-age:  $> +2SD$ ), the state prevalence was 15.8% (95% CI: 13.91, 17.89), whereas the prevalence was higher than national prevalence [14.8 (95% CI: 14.00, 15.73)]. Comparing between sexes, boys had much higher prevalence of obesity [19.6% (95% CI: 16.71, 22.90)] than girls [11.9% (95% CI: 10.01, 14.13)]. In term of class category, 16.7% (95% CI: 13.72, 20.06) primary level were obese compared to secondary level [15.3% (95% CI: 12.98, 17.94)].

### 3.2.5 Conclusion

The prevalence of stunted for adolescent aged 10 to 17 years in WP Kuala Lumpur was 6.0%. On the other hand, the prevalence of overweight and obesity among this population were 16.7% and 15.8% respectively. In contrast, 7.4% of the population were found to be thinness. High demand of energy and nutrient are very important for physical growth and development at this age. However, the concept of healthy eating and living should be practised at younger age to ensure healthy physical and mental development. In consequences, it is hope reduce the prevalence of stunted, thinness, overweight and obesity.

### 3.2.6 Recommendation

Thinness, overweight and obesity is still a problem to be addressed for adolescent aged 10 to 17 years in WP Kuala Lumpur. Various agencies have to take the initiative to set up plan of action to overcome such problem. Healthy eating and living concept should be carry out at an earlier stage. It can be implemented by develop pro-health policies and regulation to create health promoting environment in work place, school, public area and even at home.

One of the suggested initiatives that involve collaboration between Ministry of Health and Ministry of Education is to empower Parental and Teacher Association in school to disseminate and implement healthy eating programs in schools. With that, it can give the

concept of healthy eating and living to the children during schooling time and further practise and implement it at home and daily life. Eventually, it hopes to reduce the prevalence of thinness, overweight and obesity in the country.

## References

1. World Health Organization, & World Health Organization. (2007). Growth reference data for 5-19 years. Geneva: WHO.
2. WHO Child Growth Standards: Methods and development: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age, World Health Organization, Switzerland, 2006

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Table 3.2.1: Distribution of adolescents according to Height-For-Age (HAZ) Z-score by sociodemographic characteristics

Characteristic	Stunting (<-2SD)					Normal (≥-2SD)				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	151	10728	6.0	4.15	8.68	2258	167141	94.0	91.32	95.85
<b>Locality of School</b>										
Urban	151	10728	6.0	4.15	8.68	2258	167141	94.0	91.32	95.85
Rural										
<b>Sex</b>										
Boys	41	3880	4.3	2.85	6.54	917	85719	95.7	93.46	97.15
Girls	110	6848	7.8	5.16	11.51	1341	81422	92.2	88.49	94.84
<b>Class</b>										
Standard 4	10	887	4.0	1.54	9.81	227	21522	96.0	90.19	98.46
Standard 5	15	1231	5.6	2.99	10.38	262	20607	94.4	89.62	97.01
Standard 6	23	2635	12.4	3.65	34.65	155	18596	87.6	65.35	96.35
Form 1	16	1018	4.4	2.93	6.52	338	22206	95.6	93.48	97.07
Form 2	6	379	1.7	0.82	3.63	299	21436	98.3	96.37	99.18
Form 3	20	1179	5.3	2.91	9.33	326	21218	94.7	90.67	97.09
Form 4	26	1303	5.9	3.35	10.06	338	20918	94.1	89.94	96.65
Form 5	35	2097	9.2	5.60	14.82	313	20639	90.8	85.18	94.40
<b>Class Category</b>										
Primary Level	48	4753	7.3	3.41	14.78	644	60725	92.7	85.22	96.59
Secondary Level	103	5975	5.3	4.00	7.04	1614	106416	94.7	92.96	96.00
<b>Ethnicity</b>										
Malay	87	6022	5.8	4.52	7.44	1300	97593	94.2	92.56	95.48
Chinese	50	3887	6.8	2.67	16.21	711	53350	93.2	83.79	97.33
Indian	8	468	3.9	1.89	7.81	182	11607	96.1	92.19	98.11
Bumiputera Sabah	4	207	15.9	4.17	45.16	15	1094	84.1	54.84	95.83
Bumiputera Sarawak	2	144	20.0	3.67	62.05	8	578	80.0	37.95	96.33
Others						42	2920	100.0	0.00	100.00



**Table 3.2.2: Distribution of adolescents according to BMI-For-Age status by sociodemographic characteristics (Cont.)**

Characteristic	Thinness (<-2SD)					Normal BMI (≥ -2SD to ≤ +1SD)				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	164	13091	7.4	6.35	8.52	1478	106995	60.2	57.31	62.96
<b>Locality of School</b>										
Urban	164	13091	7.4	6.35	8.52	1478	106995	60.2	57.31	62.96
Rural										
<b>Sex</b>										
Boys	80	7681	8.6	6.87	10.65	529	49100	54.8	49.97	59.54
Girls	84	5410	6.1	4.78	7.83	949	57895	65.6	62.70	68.43
<b>Class</b>										
Standard 4	20	2013	9.0	5.29	14.85	133	12517	55.9	51.17	60.45
Standard 5	18	1391	6.4	4.00	9.99	173	13770	63.1	58.24	67.63
Standard 6	18	2164	10.2	7.27	14.11	95	11117	52.4	47.56	57.12
Form 1	28	1828	7.9	5.00	12.17	203	13182	56.8	51.81	61.58
Form 2	14	1070	4.9	2.99	7.96	182	12608	57.8	51.29	64.04
Form 3	24	1597	7.1	4.66	10.76	211	13594	60.7	54.24	66.80
Form 4	24	1582	7.1	5.28	9.58	247	15098	68.1	60.71	74.65
Form 5	18	1445	6.4	3.27	11.99	234	15110	66.5	58.51	73.57
<b>Class Category</b>										
Primary Level	56	5568	8.5	7.36	9.80	401	37404	57.1	55.28	58.95
Secondary Level	108	7523	6.7	5.45	8.21	1077	69592	61.9	57.99	65.75
<b>Ethnicity</b>										
Malay	92	7631	7.4	5.81	9.31	843	61834	59.7	57.46	61.91
Chinese	53	4145	7.2	6.15	8.51	505	37160	64.9	58.49	70.86
Indian	15	1041	8.6	5.06	14.31	92	5504	45.6	35.69	55.84
Bumiputera Sabah						15	1017	78.2	47.02	93.52
Bumiputera Sarawak	1	53	7.4	0.76	45.32	2	153	21.2	4.03	63.19
Others	3	221	7.6	1.95	25.22	21	1328	45.5	29.76	62.17

**Table 3.2.2: Distribution of adolescents according to BMI-For-Age status by sociodemographic characteristics**

Characteristic	Overweight (> +1SD to ≤ +2SD)					Obese (> +2SD)				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	402	29645	16.7	14.63	18.94	364	28093	15.8	13.91	17.89
<b>Locality of School</b>										
Urban	402	29645	16.7	14.63	18.94	364	28093	15.8	13.91	17.89
Rural										
<b>Sex</b>										
Boys	165	15237	17.0	13.90	20.64	184	17581	19.6	16.71	22.90
Girls	237	14408	16.3	14.04	18.91	180	10512	11.9	10.01	14.13
<b>Class</b>										
Standard 4	40	3687	16.5	13.05	20.54	44	4192	18.7	14.88	23.25
Standard 5	53	4057	18.6	12.56	26.59	33	2620	12.0	8.51	16.66
Standard 6	32	3858	18.2	12.68	25.36	33	4092	19.3	13.64	26.51
Form 1	68	4459	19.2	14.85	24.46	55	3754	16.2	13.16	19.70
Form 2	53	3854	17.7	13.47	22.82	56	4282	19.6	14.53	25.96
Form 3	60	3901	17.4	13.58	22.06	51	3305	14.8	10.11	21.04
Form 4	44	2566	11.6	8.07	16.32	48	2930	13.2	9.41	18.25
Form 5	52	3263	14.4	10.28	19.68	44	2917	12.8	9.31	17.43
<b>Class Category</b>										
Primary Level	125	11602	17.7	14.75	21.13	110	10904	16.7	13.72	20.06
Secondary Level	277	18043	16.1	13.46	19.05	254	17189	15.3	12.98	17.94
<b>Ethnicity</b>										
Malay	215	15977	15.4	13.26	17.88	236	18128	17.5	15.76	19.39
Chinese	127	9769	17.1	12.97	22.13	76	6163	10.8	8.57	13.44
Indian	44	2720	22.5	18.06	27.73	39	2810	23.3	15.81	32.88
Bumiputera Sabah	3	228	17.5	4.49	48.96	1	56	4.3	0.47	30.47
Bumiputera Sarawak	5	382	52.8	20.65	82.82	2	135	18.6	4.07	55.29
Others	8	570	19.5	9.55	35.76	10	801	27.4	16.91	41.24

### 3.3 Perception on body weight management Adolescent (Primary 4 To Secondary 5) In WP Kuala Lumpur

**Contributors:** Nur Shahida Abdul Aziz, Safiah Md.Yusof, Rohana Yaakof, Ruby Zainureen, Noor Ani Ahmad, Norlida Zulkafly, Rashidah Ambak

#### 3.3.1 Introduction

Body weight perception refers to the personal evaluation of one’s weight as “underweight” or “normal weight” or “overweight” irrespective of actual body mass index. Adolescent estimation of weight status may reflect an adolescent’s perception of where they are on the spectrum of body weight relative to their peers.

#### 3.3.2 Objective

##### General objective:

To assess self-perception on body weight and intentions on weight management among Malaysian adolescents aged 10 to 17 years

##### Specific Objectives

- I. To determine body weight perception among adolescents
- II. To determine body weight perception among adolescents in comparison to actual BMI- for-age status
- III. To describe intended action on their perceived body weight status
- IV. To describe motivating factors to change their body weight.
- V. To identify preferred options to change their body weight.

#### 3.3.3 Variable definition

- **Body weight perception:** An interpretation or impression; an opinion or belief
- (Ref: Collins English Dictionary – Complete and Unabridged, 12th Edition 2014 © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003, 2006, 2007, 2009, 2011, 2014)
- **Actual body weight:** Body weight that was measured during the survey.
- **Misperception:** - a wrong perception

(Ref: (Collins English Dictionary – Complete and Unabridged, 12th Edition 2014 © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003, 2006, 2007, 2009, 2011, 2014)

### 3.3.4 Findings

Results shows, 41.2% ( 95% CI: 38.02, 44.47 ) of the adolescents in WP Kuala Lumpur perceived that they have normal weight . There was no significant different in school locality, however there were significant different in sex which boys was higher in perceived thin 30.5% (95%CI: 26.61, 34.72) as compared than girls, while girls was significant higher in perceived overweight 33.3% (95%CI : 27.28,39.84) compared with boys 22.7% (95% CI: 19.21, 26.62) **(Table 3.3.1)**

Among the actual normal 50.9% ( 95% CI: 46.54, 55.24 ) was correctly perceived their weight to be normal, 27.8% ( 95% CI: 22.29, 34.13 ) was underestimated their body weight , perceived to be thin, and 19.0% ( 95% CI: 14.18, 24.97 ) , 2.3% ( 95% CI: 1.60, 3.20 ) were overestimated to be overweight, and obese respectively. However among the actual overweight 48.3% ( 95% CI: 40.93, 55.65 ) was correctly perceived their weight to be overweight, but 10.0% ( 95% CI: 6.67, 14.66 ) , 35.3% ( 95% CI: 28.23, 43.06 ) , were underestimated their body weight to be thin or normal respectively. There were significant different among adolescent that have normal body weight but perceived overweight based on school category which more secondary students perceived overweight 24.8% ( 95% CI: 19.78, 30.59 ) while more primary students perceived thin 37.7% (95% CI: 28.95, 47.38 ) **(Table 3.3.2)**.

Among all the adolescents who correctly perceived normal and have actual normal body weight, 31.4% (95% CI: 24.33, 39.43) reported that they have no plan to change their weight while adolescents who correctly perceived overweight and actual overweight 89.9% (95% CI: 84.58, 93.48) wanted to reduce their body weight. There were no significant different in school locality, sex and school category among adolescent who correctly perceived thin and overweight between four category of action taken. However there was significant different in sex among adolescents correctly perceived normal which more boys 12.3% ( 95%CI: 8.31, 17.77) than girls 4.4% ( 95% CI: 2.88,6.64 ) wanted to increase their body weight **(Table 3.3.3)**.

However, adolescents whom had misperception, perceived thin but actually in overweight and obese categories, most of them 60.4% (95%CI: 46.85, 72.50) wanted to lose weight while 20.4% (95%CI: 13.19, 30.23) wanted to increase their weight **(Table 3.3.4)**.

Health become main factor that motivate to lose weight, 68.4% (95% CI: 61.60, 74.50) and most boys choose health purpose as their main factor that motivate them to lose weight, 68.9% (95% CI: 62.32, 74.82) as compared than girls. However beauty purpose become the main factor to lose body weight among girls, 7.7% (95%CI: 5.39, 10.78) **(Table 3.3.5)**.

Among adolescents who want to increase body weight, health purpose was the highest main factor followed by increase self-confidence ,54.5% (95%CI: 48.63,60.19) , 30.1% (95% CI: 23.68,37.44) respectively. Among adolescent whom choose health purpose as their main factor girls 69.2% ( 95% CI: 57.82, 78.60 )was higher than boys, 66.8% ( 95% CI: 58.33, 74.24) **(Table 3.3.6)**.

Exercise was the highest option preferred by adolescent to lose body weight 53.8% (95% CI: 46.51,60.86). Based on school category primary 62.7% ( 95% CI: 57.94, 67.28 ) was higher than secondary (**Table 3.3.7**), while increase quantity of food was the highest option preferred by adolescents to increase their body weight, 53.9% (48.23,59.54), Based on sex, girls was higher 66.5% ( 95% CI:55.54, 75.89 ) than boys (**Table 3.3.8**).

### 3.3.5 Discussion/Conclusion

Perception of being normal weight among adolescents in WP Kuala Lumpur was similar with the national prevalence 41.2 % and 41.4% respectively.

Among the actual thin adolescent in WP Kuala Lumpur,68.2% was correctly perceived thin, and slightly lower compared with the national prevalence,69.6%. Adolescents with actual normal body weight, 50.9% was correctly perceived their weight to be normal and it slightly higher than national prevalence 50.2%.

In WP Kuala Lumpur , the trend of main factors to lose body weight among adolescent are similar with the national trend. Health purpose is the highest 66.4% main factor to lose body weight; followed by to increase self confidence 20.4% , beauty purpose 9.8 % and to have more friends 3.3% .

Health purpose is the highest 67.6 % main factor to increase body weight . But it was higher compared with the national prevalence. Its followed by to increase self confidence 19.1% , beauty purpose 9.7% and to have more friends 3.6%.

Adolescents choose to exercise as the preferred option to lose weight. However its was lower compared with the national prevalence , 61.4% and 62.5% respectively.Followed by reduce consumption of high fat foods 21.9%, increase intake of fruits and vegetables 6.5 % and reduce intake of high sugar foods 4.2%. This trend are similar with the national trend of prevalence.

60.7% of adolescents choose to increase quantity of food as the preferred option to increase body weight. It was higher compared with the national prevalence, 52.4%.

### 3.3.6 Recommendation

Body weight perception is a rather complex concept affected by `ideal` as well as `normative` body image. Our adolescents live in a society where increasingly larger proportions of the populations are overweight and obese. They are surrounded by overweight and obese peers may develop inaccurate perception. On the other hand, mass media often portray unusually thin models, especially among females, emphasizing `thin` rather than `healthy` body shapes.

Findings from this study should be utilised by relevant programme managers. Intervention to promote healthy lifestyle should be one of the approaches undertaken to halt this problem

from worsening. Nutrition education should be systematically conducted in all school, utilizing educational modules. Parents should act as role models and be actively involved in all efforts to promote healthy eating and active living among children. Media should play important role; advertise more information to adolescent and families about healthy eating and active lifestyle.

## References

1. Abbott, R. A., Lee, A. J., Stubbs, C. O., & Davies, P. S. W. (2010). Accuracy of weight status perception in contemporary Australian children and adolescents. *Journal of Paediatrics and Child Health*, 46, 343–348.
2. Brener, N. D., Eaton, D. K., Lowry, R., & McManus, T. (2004). The association between weight perception and BMI among high school students. *Obesity*, 12, 1866–1874.
3. Edwards, N. M., Pettingell, S., & Borowsky, I. W. (2010). Where perception meets reality: Self-perception of weight in overweight adolescents. *Pediatrics*, 125, 452–458.
4. Keel, P. K., Baxter, M. G., Heatherton, T. F., & Joiner, T. E. J. (2007). A 20-year longitudinal study of body weight, dieting and eating disorder symptoms. *Journal of Abnormal Psychology*, 116, 422–432. Linacre, S. (2007).
5. Maximova, K., McGrath, J. J., Barnett, T., O’Loughlin, J., Paradis, G., & Lambert, M. (2008). Do you see what I see? Weight status misperception and exposure to obesity among children and adolescents. *International Journal of Obesity*, 32, 1008–1015.
6. O’Dea, J. A., & Amy, N. K. (2011). Perceived and desired weight, weight related eating and exercising behaviours, and advice received from parents among thin, overweight, obese or normal weight Australian children and adolescents. *International Journal of Behavioral Nutrition and Physical Activity*,
7. Strauss, R. S. (1999). Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National health and nutrition examination survey III. *Archives of Pediatric and Adolescent Medicine*, 153, 741–747.
8. Viner, R. M., Haines, M. M., Taylor, S. J. C., Head, J., Booy, R., & Stansfeld, S. (2006). Body mass, weight control behaviours, weight perception and emotional well being in a multiethnic sample of early adolescents. *International Journal of Obesity*, 30, 1514.
9. Wang, Y., Liang, H., & Chen, X. (2009). Measured body mass index, body weight perception, dissatisfaction and control practices in urban low-income African American adolescents. *BMC Public Health*, 9, 183–195
10. Xie, B., Liu, C., Chou, C. P., Xia, J., Spruijt-Metz, D., & Gong, J., et al. (2003). Weight perception and psychological factors in Chinese adolescents. *Journal of Adolescent Health*, 33, 202–210.

**Table 3.3.1 : Body weight perception among adolescents by socio-demographic characteristics (Cont.)**

Characteristics	Perceived thin					Perceived Normal				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	541	44333	24.9	20.97	29.40	967	73251	41.2	38.03	44.47
<b>Locality of School</b>										
Urban	541	44333	24.9	20.97	29.40	967	73251	41.2	38.03	44.47
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	295	27309	30.5	26.61	34.72	403	37787	42.2	38.56	45.97
Girls	246	17025	19.3	14.38	25.40	564	35463	40.2	35.57	45.00
<b>School Category</b>										
Primary	222	20379	31.1	25.38	37.51	312	29851	45.6	41.38	49.86
Secondary	319	23954	21.3	17.10	26.30	655	43400	38.7	35.24	42.20
<b>Class</b>										
Standard 4	93	8644	38.6	31.28	46.42	106	10072	44.9	37.54	52.58
Standard 5	92	7337	33.6	25.29	43.06	119	9312	42.6	38.66	46.72
Standard 6	37	4398	20.7	15.07	27.78	87	10467	49.3	43.39	55.22
Form 1	75	5163	22.2	18.29	26.74	151	10062	43.3	37.28	49.58
Form 2	49	4017	18.5	11.17	28.95	118	8588	39.5	31.16	48.41
Form 3	54	3904	17.4	12.03	24.58	135	8824	39.4	34.87	44.12
Form 4	75	5617	25.4	18.07	34.44	132	8026	36.3	30.61	42.37
Form 5	66	5253	23.1	12.66	38.38	119	7899	34.7	27.43	42.86
<b>Ethnicity</b>										
Malay	338	28071	27.1	21.90	33.02	546	42153	40.7	36.45	45.10
Chinese	151	12354	21.6	17.61	26.26	324	24822	43.4	38.42	48.60
Indian	40	2951	24.4	17.08	33.67	67	4366	36.2	29.38	43.52
Bumiputera Sabah	4	326	25.1	4.60	69.95	9	570	43.9	19.42	71.68
Bumiputera Sarawak	1	53	7.4	0.76	45.32	4	283	39.2	19.17	63.67
Others	7	578	19.8	11.04	32.93	17	1056	36.2	19.54	56.92

**Table 3.3.1 : Body weight perception among adolescents by socio-demographic characteristics**

Characteristics	Perceived Overweight					Perceived Obese				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	740	49665	27.9	23.74	32.58	159	10471	5.9	4.71	7.35
<b>Locality of School</b>										
Urban	740	49665	27.9	23.74	32.58	159	10471	5.9	4.71	7.35
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	214	20318	22.7	19.21	26.62	45	4086	4.6	3.29	6.30
Girls	526	29346	33.3	27.28	39.84	114	6386	7.2	5.65	9.23
<b>School Category</b>										
Primary	124	12173	18.6	16.17	21.29	34	3074	4.7	3.21	6.81
Secondary	616	37491	33.4	29.30	37.77	125	7397	6.6	5.11	8.46
<b>Class</b>										
Standard 4	27	2766	12.3	7.39	19.91	11	927	4.1	1.89	8.80
Standard 5	51	4047	18.5	13.82	24.40	15	1141	5.2	2.54	10.45
Standard 6	46	5360	25.2	19.20	32.44	8	1006	4.7	2.96	7.51
Form 1	118	7355	31.7	26.61	37.21	10	643	2.8	1.29	5.84
Form 2	116	7702	35.4	27.50	44.15	21	1458	6.7	3.79	11.57
Form 3	130	8074	36.0	29.29	43.41	27	1595	7.1	4.10	12.08
Form 4	123	6764	30.6	24.39	37.55	33	1714	7.7	5.61	10.61
Form 5	129	7597	33.4	25.74	42.08	34	1987	8.7	5.42	13.81
<b>Ethnicity</b>										
Malay	429	28622	27.6	22.59	33.32	73	4719	4.6	3.35	6.17
Chinese	224	15712	27.5	21.85	33.98	61	4249	7.4	5.58	9.85
Indian	65	3766	31.2	22.49	41.44	18	993	8.2	4.50	14.57
Bumiputera Sabah	4	201	15.5	4.45	41.82	2	203	15.6	2.64	55.68
Bumiputera Sarawak	4	334	46.2	23.89	70.14	1	52	7.2	0.74	44.84
Others	14	1030	35.3	18.88	56.09	4	256	8.8	3.02	22.83



**Table 3.3.2: Body weight perception among adolescent by actual BMI for age status (Cont.)**

Perceived	Actual thin															
	Thin				Normal				Overweight				Obese			
	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper
<b>WP Kuala Lumpur</b>	116	68.2	58.13	76.88	45	29.3	21.01	39.32	2	1.6	0.37	6.71	1	0.8	0.12	5.57
<b>Locality of school</b>																
Urban	116	68.2	58.13	76.88	45	29.3	21.01	39.32	2	1.6	0.37	6.71	1	0.8	0.12	5.57
Rural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>																
Boys	53	65.1	50.71	77.22	25	32.1	21.18	45.45	1	1.4	0.16	10.52	1	1.4	0.21	8.83
Girls	63	72.7	60.21	82.36	20	25.4	15.05	39.52	1	1.9	0.26	13.27	-	-	-	-
<b>School Category</b>																
Primary	36	61.4	44.62	75.87	18	34.8	20.49	52.43	1	1.9	0.24	13.46	1	1.9	0.35	9.99
Secondary	80	73.3	64.31	80.70	27	25.3	17.90	34.53	1	1.4	0.17	10.49	0	0.0	0.00	0.00

**Table 3.3.2: Body weight perception among adolescent by actual BMI for age status (Cont.)**

Perceived	Actual normal															
	Thin				Normal				Overweight				Obese			
	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper
<b>WP Kuala Lumpur</b>	358	27.8	22.29	34.13	747	50.9	46.54	55.24	335	19.0	14.18	24.97	36	2.3	1.61	3.20
<b>Locality of school</b>																
Urban	358	27.8	22.29	34.13	747	50.9	46.54	55.24	335	19.0	14.18	24.97	36	2.3	1.61	3.20
Rural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>																
Boys	195	36.8	31.85	41.94	267	50.9	45.46	56.24	57	10.8	6.87	16.61	9	1.6	0.65	3.76
Girls	163	20.3	13.56	29.18	480	50.9	45.20	56.64	278	25.9	19.49	33.61	27	2.9	1.95	4.20
<b>School Category</b>																
Primary	154	37.7	28.95	47.38	205	51.6	42.35	60.72	32	8.2	5.23	12.74	10	2.5	1.44	4.15
Secondary	204	22.5	17.56	28.36	542	50.5	46.10	54.94	303	24.8	19.78	30.59	26	2.2	1.39	3.41

**Table 3.3.2: Body weight perception among adolescent by actual BMI for age status (Cont.)**

Perceived	Actual overweight															
	Thin				Normal				Overweight				Obese			
	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper
<b>WP Kuala Lumpur</b>	36	10.0	6.67	14.66	126	35.3	28.23	43.06	209	48.3	40.93	55.65	31	6.5	3.88	10.61
<b>Locality of school</b>																
Urban	36	10.0	6.67	14.66	126	35.3	28.23	43.06	209	48.3	40.93	55.65	31	6.5	3.88	10.61
Rural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>																
Boys	25	14.5	8.49	23.74	71	43.4	33.78	53.61	62	38.2	29.24	47.95	7	3.9	1.91	7.74
Girls	11	5.2	2.98	8.83	55	26.7	18.93	36.18	147	58.9	49.71	67.57	24	9.2	5.42	15.27
<b>School Category</b>																
Primary	13	9.4	5.77	15.08	60	49.5	45.52	53.52	45	36.2	28.88	44.32	7	4.8	1.33	15.77
Secondary	23	10.3	5.83	17.63	66	26.1	19.34	34.32	164	56.0	48.10	63.55	24	7.6	4.62	12.14

**Table 3.3.2: Body weight perception among adolescent by actual BMI for age status (Cont.)**

Perceived	Actual obese															
	Thin				Normal				Overweight				Obese			
	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper
<b>WP Kuala Lumpur</b>	31	9.6	6.36	14.34	49	16.3	11.15	23.08	194	52.9	46.97	58.69	90	21.2	14.80	29.52
<b>Locality of school</b>																
Urban	31	9.6	6.36	14.34	49	16.3	11.15	23.08	194	52.9	46.97	58.69	90	21.2	14.80	29.52
Rural	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>																
Boys	22	11.9	7.89	17.44	40	21.5	15.52	29.00	94	51.8	43.06	60.38	28	14.9	8.64	24.39
Girls	9	5.9	2.87	11.87	9	7.5	3.20	16.45	100	54.7	47.02	62.16	62	31.9	23.23	42.01
<b>School Category</b>																
Primary	19	16.1	11.74	21.67	29	26.4	20.54	33.14	46	43.8	36.44	51.54	16	13.7	6.32	27.18
Secondary	12	5.5	2.67	11.14	20	9.8	5.74	16.38	148	58.6	52.62	64.31	74	26.0	18.25	35.67

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents (Cont.)**

Characteristic	Perceived thin - actual thin									
	Lose weight					Increase weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	8	674	7.5	3.34	16.18	81	6161	69.0	56.94	78.88
<b>Locality of school</b>										
Urban	8	674	7.5	3.34	16.18	81	6161	69.0	56.94	78.88
Rural										
<b>Sex</b>										
Boys	7	597	11.9	5.49	24.01	36	3428	68.5	51.67	81.61
Girls	1	77	2.0	0.24	14.54	45	2733	69.5	57.39	79.44
<b>School category</b>										
Primary	6	504	14.7	5.63	33.34	20	2015	58.9	40.96	74.78
Secondary	2	170	3.1	0.77	11.62	61	4147	75.2	61.22	85.35

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents (Cont.)**

Characteristic	Perceived thin - actual thin									
	No action					Maintain body weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	23	1767	19.8	11.87	31.09	4	331	3.7	1.30	10.08
<b>Locality of school</b>										
Urban	23	1767	19.8	11.87	31.09	4	331	3.7	1.30	10.08
Rural										
<b>Sex</b>										
Boys	9	851	17.0	7.51	34.07	1	127	2.5	0.31	17.66
Girls	14	916	23.3	14.15	35.92	3	204	5.2	1.66	15.16
<b>School category</b>										
Primary	8	669	19.6	9.35	36.44	2	232	6.8	2.06	20.14
Secondary	15	1098	19.9	9.86	36.13	2	99	1.8	0.39	7.83

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents (Cont.)**

Characteristic	Perceived normal - actual normal									
	Lose weight					Increase weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	227	16106	29.6	24.83	34.89	53	4353	8.0	5.62	11.28
<b>Locality of school</b>										
Urban	227	16106	29.6	24.83	34.89	53	4353	8.0	5.62	11.28
Rural										
<b>Sex</b>										
Boys	65	6172	24.8	18.40	32.46	32	3059	12.3	8.31	17.77
Girls	162	9934	33.7	28.75	39.08	21	1294	4.4	2.88	6.64
<b>School category</b>										
Primary	54	5329	27.6	19.11	38.13	15	1472	7.6	4.28	13.24
Secondary	173	10777	30.7	25.39	36.61	38	2881	8.2	5.27	12.59

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents (Cont.)**

Characteristic	Perceived normal - actual normal									
	No action					Maintain body weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	247	17910	32.9	28.45	37.75	220	16013	29.4	24.70	34.69
<b>Locality of school</b>										
Urban	247	17910	32.9	28.45	37.75	220	16013	29.4	24.70	34.69
Rural										
<b>Sex</b>										
Boys	79	7383	29.6	23.33	36.80	91	8308	33.3	25.28	42.50
Girls	168	10528	35.7	30.01	41.89	129	7705	26.2	22.16	30.59
<b>School category</b>										
Primary	70	6542	33.9	27.18	41.35	66	5953	30.8	20.98	42.84
Secondary	177	11368	32.4	26.73	38.65	154	10060	28.7	24.16	33.65

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents (Cont.)**

Characteristic	Perceived overweight - actual overweight									
	Lose weight					Increase weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	181	12372	86.5	81.39	90.36	3	246	1.7	0.55	5.23
<b>Locality of school</b>										
Urban	181	12372	86.5	81.39	90.36	3	246	1.7	0.55	5.23
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	52	4932	84.8	73.97	91.67	2	202	3.5	0.98	11.52
Girls	129	7440	87.6	80.68	92.32	1	44	0.5	0.06	4.57
<b>School category</b>										
Primary	39	3685	87.6	82.78	91.25	-	-	-	-	-
Secondary	142	8687	86.0	78.83	91.05	3	246	2.4	0.85	6.82

**Table 3.3.3: Action taken according to correctly perceived body weight among adolescents**

Characteristic	Perceived overweight - actual overweight									
	No action					Maintain body weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	15	1047	7.3	4.70	11.22	10	639	4.5	2.16	9.01
<b>Locality of school</b>										
Urban	15	1047	7.3	4.70	11.22	10	639	4.5	2.16	9.01
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	4	352	6.0	2.38	14.55	4	329	5.7	2.02	14.79
Girls	11	695	8.2	4.33	14.96	6	310	3.7	1.62	8.05
<b>School category</b>										
Primary	5	450	10.7	6.20	17.83	1	71	1.7	0.22	11.76
Secondary	10	597	5.9	3.29	10.42	9	568	5.6	2.67	11.49

**Table 3.3.4: Action taken according to misperception of body weight among adolescents (Cont.)**

Characteristic	Perceived thin -Actual overweight/obese									
	Lose weight					Increase weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	45	3784	66.8	50.10	80.10	9	796	14.1	6.30	28.46
<b>Locality of school</b>										
Urban	45	3784	66.8	50.10	80.10	9	796	14.1	6.30	28.46
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	29	2662	62.0	43.45	77.54	8	740	17.2	7.74	34.03
Girls	16	1122	81.9	49.14	95.51	1	56	4.1	0.48	27.79
<b>School category</b>										
Primary	27	2461	86.3	73.34	93.54					
Secondary	18	1323	47.0	35.96	58.33	9	796	28.3	18.07	41.36

**Table 3.3.4: Action taken according to misperception of body weight among adolescents (Cont.)**

Characteristic	Perceived thin -Actual overweight/obese									
	No action					Maintain body weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	7	588	10.4	4.75	21.18	6	498	8.8	4.18	17.55
<b>Locality of school</b>										
Urban	7	588	10.4	4.75	21.18	6	498	8.8	4.18	17.55
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	6	538	12.5	5.63	25.52	4	357	8.3	3.37	19.09
Girls	1	50	3.7	0.39	27.40	2	141	10.3	2.09	38.02
<b>School category</b>										
Primary	2	156	5.5	1.85	15.20	3	234	8.2	2.74	22.02
Secondary	5	432	15.3	6.28	32.87	3	264	9.4	3.41	23.32

**Table 3.3.4: Action taken according to misperception of body weight among adolescents (Cont.)**

Characteristic	Actual Normal - Perceived thin/overweight/obese									
	Lose weight					Increase weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	351	23239	44.3	38.33	50.43	174	14471	27.6	22.86	32.87
<b>Locality of school</b>										
Urban	351	23239	44.3	38.33	50.43	174	14471	27.6	22.86	32.87
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	90	8285	34.4	27.14	42.48	103	9534	39.6	33.32	46.23
Girls	261	14954	52.7	44.78	60.46	71	4937	17.4	12.41	23.84
<b>School category</b>										
Primary	72	6579	36.3	25.79	48.39	62	5733	31.7	23.121	41.647
Secondary	279	16659	48.5	42.64	54.39	112	8738	25.4	20.21	31.48

**Table 3.3.4: Action taken according to misperception of body weight among adolescents**

Characteristic	Actual Normal - Perceived thin/overweight/obese									
	No action					Maintain body weight				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	143	10240	19.5	16.23	23.29	61	4514	8.6	6.72	10.95
<b>Locality of school</b>										
Urban	143	10240	19.5	16.23	23.29	61	4514	8.6	6.72	10.95
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	44	4011	16.7	11.75	23.08	24	2249	9.3	6.08	14.09
Girls	99	6229	21.9	18.13	26.31	37	2264	8.0	6.05	10.45
<b>School category</b>										
Primary	44	4246	23.4	18.70	28.97	18	1549	8.6	6.51	11.16
Secondary	99	5995	17.4	13.76	21.88	43	2965	8.6	6.09	12.10

**Table 3.3.5 : Main factors that motivate to lose body weight among adolescents by socio-demographic characteristics in WP Kuala Lumpur (Cont.)**

Characteristics	Health purpose					Beauty purpose				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	752	55978	66.4	60.40	72.00	142	8296	9.8	6.91	13.85
<b>Locality of school</b>										
Urban	752	55978	66.4	60.40	72.00	142	8296	9.8	6.91	13.85
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	300	28317	72.9	65.93	78.97	17	1590	4.1	2.30	7.18
Girls	452	27661	60.9	54.81	66.66	125	6706	14.8	10.95	19.61
<b>School category</b>										
Primary	235	22349	77.1	71.08	82.20	15	1415	4.9	2.96	7.96
Secondary	517	33629	60.9	54.54	66.83	127	6881	12.5	8.72	17.47
<b>Class</b>										
Standard 4	76	7172	80.4	71.31	87.18	5	503	5.6	2.07	14.49
Standard 5	97	7749	82.4	75.96	87.45	7	546	5.8	4.62	7.28
Standard 6	62	7428	69.6	54.72	81.32	3	367	3.4	1.07	10.52
Form 1	137	8884	68.0	60.74	74.40	23	1312	10.0	6.64	14.89
Form 2	122	8547	70.1	59.65	78.76	8	429	3.5	1.65	7.32
Form 3	103	6582	60.6	50.06	70.15	33	1856	17.1	10.83	25.87
Form 4	82	5031	53.0	44.33	61.52	31	1507	15.9	9.76	24.77
Form 5	73	4584	47.6	37.85	57.58	32	1777	18.5	12.72	26.02
<b>Ethnicity</b>										
Malay	496	37277	68.8	62.52	74.42	66	3968	7.3	5.12	10.37
Chinese	161	11996	61.0	50.40	70.67	45	2652	13.5	9.04	19.66
Indian	67	4556	62.3	44.90	76.95	29	1535	21.0	10.77	36.85
Bumiputera Sabah	7	467	54.0	25.16	80.32	1	91	10.5	1.98	40.72
Bumiputera Sarawak	4	326	59.7	23.71	87.61	-	-	-	-	-
Others	17	1356	82.3	56.05	94.39	1	50	3.0	0.32	23.45

**Table 3.3.5 : Main factors that motivate to lose body weight among adolescents by socio-demographic characteristics**

	To increase self-confidence					To have more friends				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	254	17177	20.4	16.54	24.87	33	2793	3.3	2.21	4.96
<b>Locality of school</b>										
Urban	254	17177	20.4	16.54	24.87	33	2793	3.3	2.21	4.96
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	72	7016	18.1	12.58	25.27	20	1899	4.9	3.28	7.22
Girls	182	10161	22.4	19.10	26.02	13	894	2.0	1.20	3.23
<b>School category</b>										
Primary	33	3600	12.4	9.99	15.33	17	1619	5.6	3.46	8.90
Secondary	221	13577	24.6	20.38	29.31	16	1173	2.1	1.43	3.14
<b>Class</b>										
Standard 4	5	459	5.1	1.43	16.87	8	783	8.8	6.08	12.52
Standard 5	8	654	7.0	4.63	10.35	6	451	4.8	1.57	13.72
Standard 6	20	2487	23.3	15.58	33.36	3	386	3.6	1.01	12.16
Form 1	39	2423	18.5	13.24	25.32	6	455	3.5	1.73	6.88
Form 2	42	3013	24.7	18.82	31.70	3	209	1.7	0.56	5.16
Form 3	38	2345	21.6	14.65	30.61	1	87	0.8	0.10	6.09
Form 4	50	2576	27.1	18.51	37.93	5	376	4.0	1.66	9.18
Form 5	52	3220	33.4	24.28	44.06	1	46	0.5	0.06	3.71
<b>Ethnicity</b>										
Malay	174	11477	21.2	16.07	27.37	16	1480	2.7	1.41	5.22
Chinese	53	3878	19.7	14.47	26.30	14	1137	5.8	3.12	10.49
Indian	17	1052	14.4	8.17	24.04	3	176	2.4	0.84	6.68
Bumiputera Sabah	3	307	35.5	8.50	76.56	-	-	-	-	-
Bumiputera Sarawak	3	220	40.3	12.39	76.29	-	-	-	-	-
Others	4	243	14.7	3.90	42.39	-	-	-	-	-

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Table 3.3.6 : Main factor that motivate to increase body weight among adolescents by socio-demographic characteristics (Cont.)

Characteristics	Health purpose					Beauty purpose				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	221	17906	67.6	60.68	73.83	34	2576	9.7	5.72	16.05
<b>Locality of school</b>										
Urban	221	17906	67.6	60.68	73.83	34	2576	9.7	5.72	16.05
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	124	11554	66.8	58.33	74.24	19	1699	9.8	4.70	19.36
Girls	97	6351	69.2	57.82	78.60	15	877	9.6	5.36	16.46
<b>School category</b>										
Primary	72	6801	69.8	58.49	79.10	5	446	4.6	2.36	8.71
Secondary	149	11105	66.3	57.56	74.09	29	2129	12.7	7.24	21.39
<b>Class</b>										
Standard 4	29	2644	70.0	51.70	83.51	3	299	7.9	3.86	15.49
Standard 5	27	2175	71.5	56.06	83.11	2	148	4.9	1.35	16.03
Standard 6	16	1982	67.8	41.24	86.34					
Form 1	37	2540	77.1	58.29	89.05	5	303	9.2	3.42	22.50
Form 2	16	1300	63.3	37.47	83.29	3	209	10.2	2.03	38.34
Form 3	25	1744	59.2	41.45	74.84	5	381	12.9	2.33	47.96
Form 4	39	2832	62.2	42.34	78.73	12	1008	22.2	10.26	41.48
Form 5	32	2688	68.9	57.19	78.62	4	228	5.8	1.23	23.61
<b>Ethnicity</b>										
Malay	128	10423	62.6	56.53	68.26	22	1645	9.9	5.25	17.82
Chinese	73	6080	76.8	60.39	87.84	7	612	7.7	2.49	21.61
Indian	14	936	67.0	41.44	85.37	5	319	22.8	7.42	52.24
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	1	53	100.0	100.00	100.00	-	-	-	-	-
Others	5	414	100.0	0.00	100.00	-	-	-	-	-



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Table 3.3.6 : Main factor that motivate to increase body weight among adolescents by socio-demographic characteristics

Characteristics	To increase self-confidence					To have more friends				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	58	5061	19.1	14.91	24.14	11	946	3.6	1.89	6.64
<b>Locality of school</b>										
Urban	58	5061	19.1	14.91	24.14	11	946	3.6	1.89	6.64
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	35	3373	19.5	14.05	26.39	7	681	3.9	2.05	7.43
Girls	23	1688	18.4	10.80	29.54	4	265	2.9	1.24	6.58
<b>School category</b>										
Primary	20	2103	21.6	14.26	31.28	4	395	4.1	1.67	9.54
Secondary	38	2958	17.7	13.05	23.48	7	551	3.3	1.36	7.72
<b>Class</b>										
Standard 4	7	710	18.8	10.45	31.44	1	127	3.4	0.66	15.31
Standard 5	5	452	14.8	5.79	33.08	3	269	8.8	4.48	16.64
Standard 6	8	941	32.2	13.66	58.76	-	-	-	-	-
Form 1	5	344	10.5	3.94	24.93	2	106	3.2	0.81	11.88
Form 2	6	448	21.8	9.77	41.85	1	95	4.6	0.61	27.70
Form 3	11	821	27.9	15.07	45.70	-	-	-	-	-
Form 4	8	710	15.6	8.93	25.83	-	-	-	-	-
Form 5	8	635	16.3	7.39	32.15	4	350	9.0	2.28	29.35
<b>Ethnicity</b>										
Malay	44	3846	23.1	17.59	29.69	8	742	4.5	2.63	7.43
Chinese	12	1065	13.5	8.83	20.00	2	155	2.0	0.26	13.37
Indian	1	92	6.6	0.81	38.00	1	50	3.5	0.64	17.42
Bumiputera Sabah	1	58	100.0	100.00	100.00	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

**Table 3.3.7 : Preferred option to lose body weight among adolescents by socio-demographic characteristics (Cont.)**

Characteristics	Exercise					Reduce consumption of high fat foods				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	697	51612	61.4	58.01	64.72	272	18409	21.9	19.28	24.79
<b>Locality of school</b>										
Urban	697	51612	61.4	58.01	64.72	272	18409	21.9	19.28	24.79
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	284	27021	70.1	66.70	73.37	62	6019	15.6	12.82	18.90
Girls	413	24591	54.0	50.25	57.78	210	12389	27.2	24.47	30.17
<b>School category</b>										
Primary	188	18146	62.7	57.94	67.28	65	6439	22.3	18.97	25.93
Secondary	509	33466	60.7	56.21	65.08	207	11969	21.7	18.19	25.72
<b>Class</b>										
Standard 4	60	5630	62.9	53.76	71.17	19	1786	20.0	16.49	23.93
Standard 5	72	5909	63.5	49.15	75.75	24	1868	20.1	14.08	27.78
Standard 6	56	6608	61.9	47.52	74.53	22	2785	26.1	17.71	36.71
Form 1	132	8814	67.8	58.56	75.83	41	2270	17.5	11.36	25.88
Form 2	109	8049	65.4	56.39	73.36	37	2257	18.3	11.28	28.37
Form 3	98	6324	58.9	50.46	66.90	44	2589	24.1	16.75	33.44
Form 4	83	4963	52.9	42.81	62.76	47	2547	27.2	21.07	34.23
Form 5	87	5316	55.0	47.37	62.32	38	2306	23.8	19.20	29.18
<b>Ethnicity</b>										
Malay	436	32910	61.0	57.02	64.76	184	12469	23.1	19.74	26.83
Chinese	163	11913	60.2	54.58	65.64	54	3773	19.1	16.68	21.74
Indian	69	4626	64.2	51.55	75.13	27	1550	21.5	14.38	30.87
Bumiputera Sabah	7	478	55.3	26.10	81.24	3	296	34.2	7.96	75.72
Bumiputera Sarawak	6	433	79.1	25.94	97.62	1	114	20.9	2.38	74.06
Others	16	1251	75.9	60.11	86.80	3	206	12.5	5.00	28.00

Table 3.3.7 : Preferred option to lose body weight among adolescents by socio-demographic characteristics in (Cont.)

Characteristics	Reduce intake of high sugar foods					Increase intake of fruits & vegetables				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	51	3567	4.2	3.29	5.46	83	5502	6.5	5.09	8.39
<b>Locality of school</b>										
Urban	51	3567	4.2	3.29	5.46	83	5502	6.5	5.09	8.39
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	17	1609	4.2	2.71	6.38	21	1763	4.6	2.55	8.07
Girls	34	1958	4.3	3.29	5.62	62	3739	8.2	6.48	10.37
<b>School category</b>										
Primary	9	880	3.0	2.08	4.44	23	2021	7.0	4.34	11.05
Secondary	42	2686	4.9	3.66	6.47	60	3481	6.3	4.72	8.41
<b>Class</b>										
Standard 4	3	317	3.5	1.53	7.95	7	655	7.3	3.97	13.11
Standard 5	4	290	3.1	1.12	8.35	12	869	9.3	4.21	19.42
Standard 6	2	274	2.6	0.80	7.90	4	497	4.7	2.04	10.28
Form 1	8	511	3.9	2.01	7.56	15	929	7.1	3.98	12.51
Form 2	6	410	3.3	1.59	6.84	5	316	2.6	1.25	5.21
Form 3	9	551	5.1	2.60	9.90	14	873	8.1	4.91	13.20
Form 4	6	269	2.9	0.91	8.60	13	698	7.4	4.31	12.54
Form 5	13	945	9.8	4.73	19.10	13	664	6.9	3.26	13.90
<b>Ethnicity</b>										
Malay	34	2357	4.4	3.24	5.86	44	2883	5.3	4.06	7.00
Chinese	14	1014	5.1	2.28	11.14	29	2036	10.3	7.55	13.89
Indian	1	47	0.6	0.09	4.69	8	451	6.3	3.72	10.34
Bumiputera Sabah	1	91	10.5	1.98	40.72	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	1	58	3.5	0.51	20.85	2	133	8.1	1.72	30.48

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Table 3.3.7 : Preferred option to lose body weight among adolescents by socio-demographic characteristics (Cont.)

Characteristics	Skip main meals					Consume dieting pills/use slimming cream				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	25	1660	2.0	1.34	2.91	2	134	0.2	0.04	0.69
<b>Locality of school</b>										
Urban	25	1660	2.0	1.34	2.91	2	134	0.2	0.04	0.69
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	8	775	2.0	0.90	4.42	1	80	0.2	0.03	1.62
Girls	17	885	1.9	1.18	3.19	1	54	0.1	0.01	0.98
<b>School category</b>										
Primary	7	706	2.4	1.23	4.79	1	80	0.3	0.04	1.88
Secondary	18	954	1.7	1.14	2.61	1	54	0.1	0.01	0.79
<b>Class</b>										
Standard 4	2	226	2.5	0.83	7.42	1	80	0.9	0.15	5.10
Standard 5	3	206	2.2	0.57	8.25	-	-	-	-	-
Standard 6	2	274	2.6	0.74	8.59	-	-	-	-	-
Form 1	2	133	1.0	0.23	4.53	-	-	-	-	-
Form 2	4	266	2.2	0.55	8.07	-	-	-	-	-
Form 3	3	147	1.4	0.47	3.95	-	-	-	-	-
Form 4	9	408	4.4	2.28	8.15	-	-	-	-	-
Form 5	-	-	-	-	-	1	54	0.6	0.06	4.60
<b>Ethnicity</b>										
Malay	14	882	1.6	1.00	2.65	1	80	0.1	0.02	1.10
Chinese	6	494	2.5	0.94	6.51	1	54	0.3	0.04	2.02
Indian	5	283	3.9	1.65	9.05	-	-	-	-	-
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

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Table 3.3.7 : Preferred option to lose body weight among adolescents by socio-demographic characteristics

Characteristics	Fasting					Professional advise				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	42	2544	3.0	1.86	4.90	8	604	0.7	0.33	1.54
<b>Locality of school</b>										
Urban	42	2544	3.0	1.86	4.90	8	604	0.7	0.33	1.54
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	8	791	2.1	0.71	5.82	5	465	1.2	0.49	2.97
Girls	34	1753	3.9	2.41	6.10	3	139	0.3	0.07	1.34
<b>School category</b>										
Primary	4	409	1.4	0.70	2.82	3	247	0.9	0.23	3.18
Secondary	38	2135	3.9	2.33	6.37	5	357	0.6	0.26	1.60
<b>Class</b>										
Standard 4	2	180	2.0	0.64	6.09	1	80	0.9	0.15	5.10
Standard 5	-	-	-	-	-	2	167	1.8	0.25	11.64
Standard 6	2	230	2.2	0.63	7.04	-	-	-	-	-
Form 1	6	342	2.6	1.17	5.80	-	-	-	-	-
Form 2	14	902	7.3	3.02	16.73	1	114	0.9	0.12	6.68
Form 3	4	202	1.9	0.56	6.10	1	45	0.4	0.05	3.31
Form 4	10	496	5.3	2.50	10.87	-	-	-	-	-
Form 5	4	192	2.0	0.87	4.46	3	197	2.0	0.48	8.26
<b>Ethnicity</b>										
Malay	32	1977	3.7	2.11	6.27	5	428	0.8	0.37	1.71
Chinese	6	362	1.8	0.71	4.65	2	130	0.7	0.12	3.55
Indian	4	205	2.8	0.96	8.07	1	45	0.6	0.07	5.13
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

**Table 3.3.8 : Preferred option to increase body weight among adolescents by socio-demographic characteristics (Cont..)**

Characteristics	Increase quantity of food					Taking supplement				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	202	16347	60.7	55.20	65.88	74	6289	23.3	18.59	28.86
<b>Locality of school</b>										
Urban	202	16347	60.7	55.20	65.88	74	6289	23.3	18.59	28.86
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	109	10329	57.7	50.99	64.18	51	4574	25.6	18.88	33.63
Girls	93	6018	66.5	55.54	75.89	23	1715	18.9	11.05	30.53
<b>School category</b>										
Primary	57	5508	55.1	47.26	62.74	28	2669	26.7	20.45	34.09
Secondary	145	10839	63.9	57.57	69.83	46	3619	21.3	15.50	28.66
<b>Class</b>										
Standard 4	24	2219	57.3	47.46	66.61	10	961	24.8	18.71	32.13
Standard 5	19	1522	47.9	28.48	67.97	12	1004	31.6	17.41	50.28
Standard 6	14	1766	60.1	42.53	75.35	6	704	24.0	11.84	42.50
Form 1	29	1926	60.1	48.43	70.74	9	575	18.0	7.81	36.11
Form 2	16	1215	57.0	31.99	78.90	5	420	19.7	8.13	40.55
Form 3	25	1774	58.8	36.57	77.95	13	988	32.8	13.30	60.72
Form 4	42	3182	67.0	58.42	74.52	14	1179	24.8	20.23	30.03
Form 5	33	2741	71.2	45.73	87.90	5	456	11.9	4.41	28.16
<b>Ethnicity</b>										
Malay	123	10018	59.9	51.33	67.84	47	4016	24.0	17.72	31.63
Chinese	62	5096	62.0	54.62	68.87	20	1777	21.6	15.20	29.80
Indian	13	968	66.0	37.25	86.39	4	236	16.1	5.59	38.23
Bumiputera Sabah	1	58	100.0	100.00	100.00	-	-	-	-	-
Bumiputera Sarawak	1	53	100.0	100.00	100.00	-	-	-	-	-
Others	2	154	37.1	7.39	81.40	3	260	62.9	18.60	92.61

**Table 3.3.8 : Preferred option to increase body weight among adolescents by socio-demographic characteristics**

Characteristics	Take high calorie foods					Others				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	31	2590	9.6	6.23	14.55	21	1720	6.4	4.19	9.61
<b>Locality of school</b>										
Urban	31	2590	9.6	6.23	14.55	21	1720	6.4	4.19	9.61
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	18	1777	9.9	5.70	16.75	13	1213	6.8	4.36	10.39
Girls	13	813	9.0	4.89	15.92	8	507	5.6	2.63	11.53
<b>School category</b>										
Primary	10	1037	10.4	5.38	19.09	9	777	7.8	3.55	16.19
Secondary	21	1553	9.2	5.15	15.77	12	944	5.6	3.58	8.57
<b>Class</b>										
Standard 4	3	345	8.9	2.81	24.79	4	347	9.0	2.84	24.95
Standard 5	4	329	10.4	5.66	18.22	4	323	10.2	2.11	37.19
Standard 6	3	363	12.4	3.05	38.72	1	107	3.6	0.46	23.63
Form 1	5	367	11.4	5.42	22.56	5	336	10.5	4.33	23.30
Form 2	3	286	13.4	4.00	36.56	2	210	9.9	2.71	30.05
Form 3	4	255	8.4	3.10	20.95	-	-	-	-	-
Form 4	4	293	6.2	2.17	16.31	1	98	2.1	0.29	13.10
Form 5	5	352	9.2	2.56	27.85	4	299	7.8	1.81	27.89
<b>Ethnicity</b>										
Malay	20	1777	10.6	6.92	15.95	12	924	5.5	2.71	10.93
Chinese	7	595	7.2	2.74	17.76	8	751	9.1	6.10	13.46
Indian	4	218	14.8	2.52	53.95	1	46	3.1	0.55	15.72
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-

### 3.4 Meal pattern among adolescents (Primary 4 to Secondary 5) in WP Kuala Lumpur

**Contributors:** Mohamad Hasnan Ahmad, Ling Swee Nian, Nur Ili Mohamad Tarmizi, Ainan Nasrina Ismail, Mahenderan Appukutty, Rusidah Selamat, Azli Baharudin, Ruhaya Salleh

#### 3.4.1 Introduction

The term ‘meal patterns’ is often used to describe individuals’ eating patterns at the level of a ‘meal’, such as a main meal (for example, breakfast, lunch or dinner) or a smaller-sized meal (for example, supper or snack). It also can be described in three constructs, which is patterning (frequency, spacing, regularity, skipping, timing), format (types of food combinations, sequencing of foods, nutrient profile/content); and context (eating with others or with the family, eating in front of the television or out of the home). Understanding the ways in which different meal patterns make an impact on diet quality is very important as it believed to affect the growth of the individual and elucidate important diet–disease relationships, especially among adolescents. Therefore, meal pattern-based approach could complement current nutrition advice to enhance healthy eating campaign strategies.

#### 3.4.2 Objective

##### General objective:

To determine the meal pattern of adolescent in WP Kuala Lumpur (Primary 4 to Secondary 5).

##### Specific objective:

- To determine the prevalence consumption of individual main meals (breakfast, lunch, dinner) and intermeal (during recess, afternoon tea and heavy meal after dinner).
- To identify the sources of food and/or drink consume for main meals (breakfast, lunch, dinner) and intermeals (during recess, afternoon tea and heavy meal after dinner).
- To identify reasons for skipping main meals (breakfast, lunch and dinner).
- To determine the prevalence of practice bringing food or drinks to school.
- To identify common type of food or drink brought to school.
- To determine the prevalence of eating out in adolescents.
- To determine the prevalence of snacking and practice of buying snack out of school area.
- To identify common type of snack consumed and bought out of school area.
- To identify source of media that affect meal pattern among adolescents.

#### 3.4.3 Variable Definition

- **Main meal:** the traditional meal; breakfast, lunch, dinner.



- **Breakfast:** defined as the first food taken after waking from sleep, food intake in the early morning, between 6.00 am to 8 am.
- **Lunch:** defined as food consumed or meal between 11.00 am to 3.00 pm.
- **Dinner:** defined as foods consumed or meal between 6.00 pm to 10.00 pm.
- **Afternoon tea:** defined as food and/ or drinks taken between lunch and dinner, between 3.00 pm to 6.00 pm.
- **Heavy meal after dinner:** food taken at night after the dinner after 10.00 pm. Examples of foods that are considered heavy meal is high calorie food such as *nasi lemak, roti canai, fried mee, burger, fried chicken* and so on. It does not include two small snacks like crackers and/or a glass of milk.
- **Skipping meal:** the omission or lack of consumption of one or more of the traditional main meals (breakfast, lunch or dinner) throughout the day.
- **Dieting:** to limit food intake in terms of the amount of frequency of eating for weight loss purposes.
- **Fast food:** meant in this question, including ready-to-eat food. Ready-to-eat foods are foods that can be eaten immediately after purchase. It consists of cooked food, food either hot or cold foods and foods that can be eaten without further cooking or heating.
- **Snacking:** consumption of energy outside of traditional meals such as breakfast, lunch, and dinner.
- **Eating during school break time:** Eating time between the intervals of classes after school started.
- **Eating out:** either eating at restaurant or hawker stall, and does not includes buying outside food and eat it at home.
- **Snack food:** snack food such as bun, biscuits, fruits, nuts, crackers, ice cream, junk foods, pickles, flavored/carbonated drink, fries/ nugget/sausage, candy or chocolate.

#### 3.4.4 Findings

There were 2,409 school children that represent 177, 887 school children aged 10 to 17 years old in WP Kuala Lumpur responded to this module. The analysis showed that 29.8% (95% CI: 22.85, 37.78), 49.5% (95% CI: 41.88, 57.18) and 61.6% (95% CI: 52.71, 69.75) adolescents took breakfast, lunch and dinner every day, respectively. The study also revealed that 12.7% (95%

CI: 10.77, 15.01) of the adolescents had never took breakfast in the previous week. More than half of the respondents reported that the source of foods for main meals were prepared at home especially for breakfast and dinner. No appetite [(39.4% (95% CI: 36.21, 42.69) and no time (35.5% (95% CI: 31.97, 39.27))] were the reasons why they skipped breakfast. In addition to that, 41.2% (95% CI: 37.33, 45.26) and 48.7% (95% CI: 46.24, 51.22) of the adolescents reported that no appetite was identified as a major reason they skipped lunch and dinner. More than half (66.4% (95% CI: 60.68, 71.65) of the students reported that they eat and/or drink during recess time everyday and the main food source of the meal was from school canteen (72.1% (95% CI: 64.38, 78.64). There were 7.3% (95% CI: 6.01, 8.95) adolescents had heavy meal after dinner everyday, whilst majority of them (65.8% (95% CI: 60.21, 71.01)) had heavy meal after dinner at least once a week and remaining 26.8% (95% CI: 21.43, 33.04) never take heavy supper. It was found that among those respondents consumed heavy supper, majority of them took supper at home (56.0% (95% CI: 53.11, 58.94) and restaurant or kiosk (35.9% (95% CI: 33.18, 38.81)). Meanwhile, the analysis showed that 82.1% (95% CI: 76.98, 86.36) adolescents consumed fast food at one to six times in a week and 1.9% (95% CI: 1.08, 3.42) consumed fast food seven days in a week. There were 10.9% (95% CI: 6.71, 17.10) and 49.7% (95% CI: 44.44, 54.92) adolescents brought foods and drinks to school everyday, respectively. The most common foods brought to school were bread/ bun/ sandwich (42.5% (95% CI: 33.53, 52.09)), followed by nasi lemak/ fried rice/ mixed rice (30.2% (95% CI: 24.00, 37.18)). Meanwhile, majority of the students brought plain water to school (88.1% (95% CI: 85.28, 90.45)). More than half of the students spent their pocket money to buy foods and/ or drinks. It was shown that, 71.1% (95% CI: 68.33, 73.76) of the adolescents in WP Kuala Lumpur had eating out at least one to three times in a week. About 65.6% (95% CI: 62.48, 68.51) of the school children consumed snack foods one to three times in a week. There were 35.3% (95% CI: 30.69, 40.12) of them claimed that they took bread/ bun/ sandwich as their snack. In term of buying food outside the school premises, 9.9% (95% CI: 46.64, 57.60) of the respondents claimed that they bought foods and/ or drinks outside the school at least five times during schooldays. Flavoured/ carbonated drinks (20.9% (95% CI: 16.23, 26.55) was commonly bought outside school compound. The analysis also revealed that 33.8% (95% CI: 26.79, 41.57) of the adolescents in WP Kuala Lumpur claimed that they were not influenced by any source of media in term of dietary pattern. Simultaneously, social media (39.7% (95% CI: 34.73, 45.00) and television 29.6% (95% CI: 24.84, 34.95) were reported as the most influenced media that may affect their eating habits.

### 3.4.5 Discussions/Conclusion

Irregular eating habits among the adolescents in WP Kuala Lumpur is a big concern. No appetite was commonly reported as a reason for adolescent to skip meal. Meanwhile, the prevalence of having meal after dinner and consumption of fast foods also being an important issue need to be highlighted. The frequency of the students bought foods and drinks outside

the school compound would be a concern, since the analysis showed that unhealthy foods and drinks such as French fries/ nugget/ sausage and flavoured drinks/ carbonated drinks are available outside the school premise. Social media and television could be the best platform to influence the adolescents in practising healthy eating in their daily life.

### 3.4.6 Recommendation

From the survey, advocacy on proper meal pattern practice among adolescent is crucial therefore, an holistic and comprehensive nutrition intervention should be implemented nation-wide, where every stakeholders must work together. Current adolescent is the future adult, thus healthier adolescent generation is warranted for a healthier nation. Therefore, more health promotion such as healthy eating habits in house, school and eating out must be addressed systematically. Positive behavioral changes on dietary pattern need a longer time but the support and intervention must be continuous. Ministry of Health and Ministry of Education together with support and cooperation from Parents and Teacher Association and also professional bodies (Nutrition Society of Malaysia, Malaysian Dietitians' Association, Malaysian Association for the Study of Obesity), that are related to diet and lifestyle should work hand-in-hand to educate and empower the adolescent on proper nutrition intakes daily especially on main meals.

### References

1. Leech RM, Worsley A, Timperio A, McNaughton SA. Understanding meal patterns: definitions, methodology and impact on nutrient intake and diet quality. *Nutrition research reviews*. 2015 Jun;28(1):1-21.
2. Delormier T, Frohlich KL, Potvin L. Food and eating as social practice—understanding eating patterns as social phenomena and implications for public health. *Sociology of health & illness*. 2009 Mar 1;31(2):215-28.
3. Fitzgerald A, Heary C, Nixon E, Kelly C. Factors influencing the food choices of Irish children and adolescents: a qualitative investigation. *Health promotion international*. 2010 Apr 10;25(3):289-98.
4. López-Guimerà G, Levine MP, Sánchez-Carracedo D, Fauquet J. Influence of mass media on body image and eating disordered attitudes and behaviors in females: A review of effects and processes. *Media Psychology*. 2010 Nov 30;13(4):387-416.
5. Croezen S, Visscher TL, Ter Bogt NC, Veling ML, Haveman-Nies A: Skipping breakfast, alcohol consumption and physical inactivity as risk factors for overweight and obesity in adolescents: results of the E-MOVO project. *Eur J Clin Nutr* 2009, 63:405-412.
6. Sjöberg A, L Hallberg L, D Höglund D and L Hulthén L. 2003. Meal pattern, food choice, nutrient intake and lifestyle factors in The Göteborg Adolescence Study. *European Journal of Clinical Nutrition* 57, 1569–1578. doi:10.1038/sj.ejcn.1601726

7. Maxwell MA, Cole DA. Weight change and appetite disturbance as symptoms of adolescent depression: Toward an integrative biopsychosocial model. *Clinical Psychology Review*. 2009 Apr 30;29(3):260-73.
8. Garis Panduan Pelaksanaan Pemakanan Sihat di Sekolah. Bahagian Pemakanan, Kementerian Kesihatan Malaysia.
9. Powell LM, Nguyen BT. Fast-food and full-service restaurant consumption among children and adolescents: effect on energy, beverage, and nutrient intake. *JAMA pediatrics*. 2013 Jan 1;167(1):14-20.
10. Dixon, H., Scully, M., Niven, P., Kelly, B., Chapman, K., Donovan, R., Martin, J., Baur, L. A., Crawford, D. and Wakefield, M. (2014), Effects of nutrient content claims, sports celebrity endorsements and premium offers on pre-adolescent children's food preferences: experimental research. *Pediatric Obesity*, 9: e47–e57. doi:10.1111/j.2047-6310.2013.00169.x
11. Lachat C, Nago E, Verstraeten R, Roberfroid D, Van Camp J, Kolsteren P. Eating out of home and its association with dietary intake: a systematic review of the evidence. *Obesity Reviews*. 2012 Apr 1;13(4):329-46.
12. Bezerra IN, Curioni C, Sichieri R. Association between eating out of home and body weight. *Nutrition reviews*. 2012 Feb 1;70(2):65-79.
13. Washi SA, Ageib MB. Poor diet quality and food habits are related to impaired nutritional status in 13-to 18-year-old adolescents in Jeddah. *Nutrition Research*. 2010 Aug 31;30(8):527-34.
14. Grinberg N, Naaman M, Shaw B, Lotan G. Extracting Diurnal Patterns of Real World Activity from Social Media. *InICWSM 2013* Jul 8.

Table 3.4.1 : Prevalence of breakfast per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Breakfast frequency per week									
	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	699	52980	29.8	22.85	37.78	1388	102244	57.5	51.22	63.51
<b>Locality of school</b>										
Urban	699	52980	29.8	22.85	37.78	1388	102244	57.5	51.22	63.51
Rural										
<b>Sex</b>										
Boys	306	28477	31.8	23.63	41.18	535	50162	55.9	48.69	62.95
Girls	393	24503	27.8	20.85	35.96	853	52082	59.0	52.56	65.21
<b>Ethnicity</b>										
Malay	279	21194	20.4	16.35	25.25	906	67910	65.5	61.27	69.49
Chinese	332	25699	44.9	34.47	55.87	340	25382	44.4	36.78	52.27
Indian	70	4690	38.8	30.39	48.02	94	5768	47.8	41.32	54.29
Bumiputera Sabah	4	308	23.7	8.94	49.46	14	947	72.8	50.20	87.64
Bumiputera Sarawak	1	76	10.6	1.70	44.80	8	532	73.6	21.24	96.66
Others	13	1013	34.7	21.03	51.47	26	1705	58.4	44.50	71.09
<b>School level</b>										
Primary school	232	21197	32.3	17.98	51.04	386	37512	57.2	42.62	70.68
Secondary school	467	31783	28.3	22.37	35.07	1002	64732	57.6	52.56	62.53
<b>Class</b>										
Standard 4	81	3154	31.8	15.06	55.01	127	5426	55.3	39.15	70.37
Standard 5	84	6361	29.0	18.70	42.13	156	12525	57.2	45.48	68.12
Standard 6	67	7718	36.4	19.52	57.35	103	12600	59.3	40.38	75.88
Form 1	100	7047	30.3	22.87	39.02	210	13552	58.4	51.11	65.26
Form 2	76	5644	25.9	16.83	37.57	183	12943	59.3	48.93	68.96
Form 3	96	6517	29.1	21.14	38.59	200	12763	57.0	50.40	63.33
Form 4	86	5339	24.0	18.39	30.74	227	13766	61.9	52.96	70.18
Form 5	109	7235	31.9	20.52	45.93	182	11708	51.6	42.78	60.34
<b>School session</b>										
Morning session	476	35583	30.5	23.83	38.01	903	66374	56.8	50.96	62.48
Evening session	101	7455	30.9	22.70	40.53	209	13716	56.9	47.11	66.10
Morning and evening session	122	9942	26.9	14.73	44.00	276	22154	60.0	48.37	70.58
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	54	4317	33.0	21.34	47.16	89	7123	54.4	42.69	65.66
Normal (≥-2sd - ≤+1sd)	443	33399	31.2	24.16	39.29	842	60468	56.5	50.27	62.61
Overweight (>+1sd - ≤+2sd)	99	7376	24.9	16.70	35.36	246	18133	61.2	54.26	67.65
Obese (>+2sd)	101	7776	27.7	21.04	35.48	211	16520	58.8	51.06	66.14
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	43	2980	27.8	18.73	39.09	88	6438	60.0	52.27	67.28
Normal (≥-2sd)	655	49933	29.9	22.85	38.02	1300	95806	57.3	50.93	63.51

**Table 3.4.1 : Prevalence of breakfast per week among adolescents by socio-demographic characteristics and nutritional status**

	Did not take breakfast				
	Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	322	22663	12.7	10.77	15.01
<b>Locality of school</b>					
Urban	322	22663	12.7	10.77	15.01
Rural					
<b>Sex</b>					
Boys	118	11028	12.3	9.47	15.82
Girls	204	11635	13.2	10.90	15.87
<b>Ethnicity</b>					
Malay	203	14579	14.1	12.12	16.25
Chinese	88	6105	10.7	7.57	14.86
Indian	26	1617	13.4	9.13	19.22
Bumiputera Sabah	1	46	3.6	0.48	21.85
Bumiputera Sarawak	1	114	15.8	2.37	59.13
Others	3	201	6.9	1.97	21.42
<b>School level</b>					
Primary school	75	6836	10.4	7.38	14.54
Secondary school	247	15827	14.1	11.98	16.49
<b>Class</b>					
Standard 4	29	2903	13.0	8.18	19.91
Standard 5	38	3020	13.8	9.99	18.72
Standard 6	8	913	4.3	1.18	14.45
Form 1	44	2625	11.3	8.32	15.18
Form 2	46	3227	14.8	9.76	21.81
Form 3	50	3117	13.9	9.60	19.74
Form 4	51	3116	14.0	10.93	17.82
Form 5	56	3742	16.5	11.40	23.28
<b>School session</b>					
Morning session	214	14873	12.7	10.61	15.20
Evening session	45	2953	12.2	9.92	15.01
Morning and evening session	63	4837	13.1	8.43	19.79
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	21	1651	12.6	7.92	19.50
Normal ( $\geq$ -2sd - $\leq$ +1sd)	192	13078	12.2	10.27	14.51
Overweight ( $>$ +1sd - $\leq$ +2sd)	57	4137	14.0	10.49	18.32
Obese ( $>$ +2sd)	52	3797	13.5	10.00	18.02
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	20	1311	12.2	6.42	22.02
Normal ( $\geq$ -2sd)	302	21352	12.8	10.69	15.20

Table 3.4.2 : Source of food for breakfast among adolescents by socio-demographic characteristics and nutritional status (Cont..)

	Prepared at home					School canteen				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	1456	108083	70.5	65.79	74.88	352	26606	17.4	13.36	22.26
<b>Locality of school</b>										
Urban	1456	108083	70.5	65.79	74.88	352	26606	17.4	13.36	22.26
Rural										
<b>Sex</b>										
Boys	562	52311	67.5	62.40	72.25	153	14518	18.7	13.67	25.13
Girls	894	55772	73.6	68.22	78.41	199	12088	16.0	12.41	20.29
<b>Ethnicity</b>										
Malay	803	60561	68.8	62.95	74.04	242	18509	21.0	16.49	26.39
Chinese	480	36008	71.5	63.31	78.52	79	6119	12.2	7.73	18.60
Indian	129	8238	80.6	70.27	88.01	23	1475	14.4	8.92	22.51
Bumiputera Sabah	10	809	64.5	43.27	81.20	5	310	24.7	11.15	46.26
Bumiputera Sarawak	8	526	86.5	44.07	98.10	1	82	13.5	1.90	55.93
Others	26	1942	71.4	43.47	89.04	2	110	4.1	1.01	14.88
<b>School level</b>										
Primary school	461	43375	75.1	67.15	81.62	103	10161	17.6	11.54	25.89
Secondary school	995	64709	67.8	62.52	72.64	249	16445	17.2	12.28	23.64
<b>Class</b>										
Standard 4	157	14643	76.9	70.49	82.31	29	2951	15.5	8.29	27.13
Standard 5	178	13838	74.3	63.14	83.00	47	3843	20.6	13.61	30.03
Standard 6	126	14893	74.1	66.11	80.69	27	14893	16.7	11.24	24.22
Form 1	218	14556	70.7	64.32	76.29	56	3668	17.8	11.11	27.30
Form 2	151	10685	57.9	43.43	71.18	41	3042	16.5	8.53	29.51
Form 3	202	12933	68.2	54.38	79.38	46	3203	16.9	8.20	31.61
Form 4	219	13286	70.0	61.91	77.07	60	3618	19.1	13.63	26.04
Form 5	205	13250	71.7	63.71	78.58	46	2913	15.8	10.66	22.71
<b>School session</b>										
Morning session	951	70483	70.3	65.10	75.10	255	19130	19.1	15.17	23.75
Evening session	205	13593	64.4	59.06	69.49	34	2273	10.8	5.41	20.33
Morning and evening session	300	24007	75.2	68.00	81.21	63	5203	16.3	10.09	25.25
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	98	7974	72.3	65.09	78.59	27	2026	18.4	13.36	24.76
Normal (≥-2sd - ≤+1sd)	910	66174	71.4	66.20	76.16	204	15283	16.5	12.73	21.12
Overweight (>+1sd - ≤+2sd)	240	18015	71.0	61.61	78.81	61	4292	16.9	10.46	26.16
Obese (>+2sd)	207	15853	65.9	60.20	71.10	59	4960	20.6	15.55	26.78
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	87	6132	67.0	54.88	77.23	30	2418	26.4	16.64	39.25
Normal (≥-2sd)	1368	101883	70.8	65.73	75.32	322	24188	16.8	12.81	21.72

Table 3.4.2 : Source of food for breakfast among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Source of food for breakfast									
	Restaurant/ kiosk					Hostel				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	144	10686	7.0	5.21	9.28	66	4271	2.8	1.01	7.45
<b>Locality of school</b>										
Urban	144	10686	7.0	5.21	9.28	66	4271	2.8	1.01	7.45
Rural										
<b>Sex</b>										
Boys	64	6007	7.8	5.39	11.03	23	1989	2.6	0.74	8.49
Girls	80	4679	6.2	4.49	8.44	43	2282	3.0	0.88	9.84
<b>Ethnicity</b>										
Malay	53	3941	4.5	3.29	6.05	56	3533	4.0	1.16	12.94
Chinese	78	5977	11.9	8.75	15.91	4	402	0.8	0.21	2.99
Indian	7	47	4.0	1.75	8.82	1	50	0.5	0.06	3.40
Bumiputera Sabah	3	135	10.8	2.14	40.07					
Bumiputera Sarawak										
Others	3	225	8.3	2.75	22.44	5	289	8.3	2.75	22.44
<b>School level</b>										
Primary school	30	2814	4.9	3.03	7.75	3	257	0.4	0.10	2.00
Secondary school	114	7872	8.2	5.99	11.25	39	4015	4.2	1.51	11.17
<b>Class</b>										
Standard 4	13	1103	5.8	2.28	13.94	1	83	0.4	0.05	3.58
Standard 5	9	729	3.9	1.45	10.16	1	68	0.4	0.05	2.76
Standard 6	8	982	4.9	2.71	8.64	1	105	0.5	0.07	3.68
Form 1	28	1896	9.2	5.51	14.98	5	300	1.5	0.34	5.94
Form 2	22	1644	8.9	5.07	15.20	38	2566	13.9	4.41	36.15
Form 3	19	1232	6.5	4.30	9.70	17	1017	5.4	1.12	22.13
Form 4	21	1447	7.6	3.92	14.31	1	39	0.2	0.02	1.71
Form 5	24	1654	9.0	5.09	15.30	2	93	0.5	0.06	4.21
<b>School session</b>										
Morning session	83	6032	6.0	4.32	8.33	40	2339	2.3	0.71	7.41
Evening session	44	3166	15.0	11.00	20.14	20	1541	7.3	2.60	18.86
Morning and evening session	17	1488	4.7	2.72	7.87	6	391	1.2	0.31	4.75
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	10	758	6.9	3.18	14.23	2	206	1.9	0.43	7.82
Normal (≥-2sd - ≤+1sd)	89	6502	7.0	4.94	9.88	39	2470	2.7	0.96	7.18
Overweight (>+1sd - ≤+2sd)	21	1581	6.2	3.45	10.99	13	856	3.4	1.00	10.71
Obese (>+2sd)	24	1845	7.7	5.31	10.95	12	739	3.1	1.26	7.31
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	7	349	3.8	1.46	9.60	3	207	2.3	0.82	6.08
Normal (≥-2sd)	137	10337	7.2	5.35	9.57	63	4065	2.8	1.00	7.68



Table 3.4.2 : Source of food for breakfast among adolescents by socio-demographic characteristics and nutritional status

Socio-demographic Characteristics	Source of food for breakfast				
	Count	Estimated Population	Prevalence (%)	Others	
				95% CI Lower	95% CI Upper
<b>WP Kuala Lumpur</b>	44	3574	2.3	1.81	2.99
<b>Locality of school</b>					
Urban	44	3574	2.3	1.81	2.99
Rural					
<b>Sex</b>					
Boys	26	2650	3.4	2.42	4.82
Girls	18	924	1.2	0.60	2.48
<b>Ethnicity</b>					
Malay	18	1533	1.7	1.23	2.47
Chinese	22	1839	3.7	2.58	5.15
Indian	1	50	0.5	0.09	2.69
Bumiputera Sabah					
Bumiputera Sarawak					
Others	3	152	5.6	1.96	14.92
<b>School level</b>					
Primary school	11	1162	2.0	1.49	2.72
Secondary school	33	2411	2.5	1.82	3.50
<b>Class</b>					
Standard 4	3	254	1.3	0.47	3.76
Standard 5	2	146	0.8	0.23	2.65
Standard 6	6	762	3.8	2.18	6.52
Form 1	3	180	0.9	0.28	2.69
Form 2	5	506	2.7	0.66	10.67
Form 3	8	585	3.1	1.38	6.76
Form 4	9	581	3.1	1.75	5.30
Form 5	8	560	3.0	1.50	6.02
<b>School session</b>					
Morning session	28	2214	2.2	1.55	3.14
Evening session	6	519	2.5	0.74	7.83
Morning and evening session	10	841	2.6	1.46	4.72
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	1	58	0.5	0.06	4.12
Normal (≥-2sd - ≤+1sd)	28	2196	2.4	1.56	3.59
Overweight (>+1sd - ≤+2sd)	8	645	2.5	1.41	4.54
Obese (>+2sd)	7	675	2.8	1.23	6.26
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	1	45	0.5	0.06	4.20
Normal (≥-2sd)	43	3528	2.5	1.89	3.17

Table 3.4.3 : Reasons for skipping breakfast among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Reasons for skipping breakfast									
	No food available					No appetite				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	151	11082	9.8	8.23	11.73	613	44374	39.4	36.21	42.69
<b>Locality of school</b>										
Urban	151	11082	9.8	8.23	11.73	613	44374	39.4	36.21	42.69
Rural										
<b>Sex</b>										
Boys	71	6529	11.7	9.48	14.42	217	20540	36.9	32.33	41.70
Girls	80	4553	8.0	5.99	10.60	396	23833	41.9	38.55	45.26
<b>Ethnicity</b>										
Malay	114	8494	11.1	9.11	13.46	435	32279	42.2	38.70	45.77
Chinese	33	2323	8.8	5.57	13.65	110	8114	30.7	28.32	33.27
Indian	2	119	1.9	0.48	6.88	41	2170	33.8	19.49	51.92
Bumiputera Sabah						9	683	72.1	44.37	89.34
Bumiputera Sarawak						6	389	60.2	21.40	89.33
Others	2	145	8.5	1.85	31.46	12	739	43.3	30.06	57.63
<b>School level</b>										
Primary school	33	3125	8.0	5.71	11.06	159	15785	40.3	32.97	48.18
Secondary school	118	7957	10.8	9.01	12.96	454	28588	38.9	36.39	41.48
<b>Class</b>										
Standard 4	16	1470	10.8	6.41	17.64	58	5751	42.3	37.96	46.73
Standard 5	10	826	6.1	4.05	9.03	62	5138	37.8	25.43	52.03
Standard 6	7	829	6.9	4.69	10.16	39	4897	41.0	31.19	51.62
Form 1	20	1289	9.1	5.74	14.08	104	6649	46.9	39.67	54.20
Form 2	16	1208	8.4	3.82	17.47	84	5681	39.5	34.63	44.56
Form 3	20	1456	10.0	5.60	17.34	87	5307	36.6	30.47	43.16
Form 4	34	2144	13.5	9.02	19.80	102	6183	39.0	33.31	45.06
Form 5	28	1861	12.8	9.46	17.05	77	4768	32.7	26.08	40.20
<b>School session</b>										
Morning session	101	7211	9.8	8.11	11.71	400	29350	39.7	35.10	44.54
Evening session	20	1380	9.5	4.50	18.95	93	5807	40.0	32.85	47.58
Morning and evening session	30	2490	10.3	7.73	13.58	120	9217	38.1	33.36	43.04
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	10	668	8.8	4.20	17.34	52	4224	55.3	42.29	67.69
Normal (≥-2sd - ≤+1sd)	105	7749	11.7	9.48	14.28	374	26204	39.4	35.20	43.86
Overweight (>+1sd - ≤+2sd)	22	1603	8.0	5.05	12.54	99	7304	36.6	30.00	43.67
Obese (>+2sd)	6	1061	2.8	1.15	6.46	15	6642	6.0	3.40	10.22
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	7	551	7.9	3.38	17.54	39	2779	40.0	28.60	52.62
Normal (≥-2sd)	144	10531	10.0	8.33	11.88	574	41594	39.4	35.82	43.02

**Table 3.4.3 : Reasons for skipping breakfast among adolescents by socio-demographic characteristics nutritional status (Cont..)**

Socio-demographic Characteristics	Reasons for skipping breakfast									
	No time					On diet/ control body weight				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	548	40015	35.5	31.97	39.27	70	5141	4.6	3.11	6.65
<b>Locality of school</b>										
Urban	548	40015	35.5	31.97	39.27	70	5141	4.6	3.11	6.65
Rural										
<b>Sex</b>										
Boys	191	18078	32.5	26.81	38.70	35	3250	5.8	3.80	8.86
Girls	357	21937	38.5	34.62	42.60	35	1891	3.3	2.00	5.47
<b>Ethnicity</b>										
Malay	114	26489	11.1	9.11	13.46	435	3276	42.2	38.70	45.77
Chinese	135	10178	38.6	31.23	46.45	16	998	3.8	2.31	6.12
Indian	39	2493	38.9	27.48	51.62	9	596	9.3	3.73	21.31
Bumiputera Sabah	2	112	11.8	2.55	40.57	1	45	4.7	0.63	28.00
Bumiputera Sarawak	2	205	31.7	6.89	74.51	1	52	8.1	0.85	47.52
Others	8	539	31.6	16.22	52.52	2	173	10.2	1.87	40.10
<b>School level</b>										
Primary school	152	14860	38.0	30.12	46.53	19	1623	4.1	1.85	9.06
Secondary school	396	25155	34.2	30.94	37.68	51	3517	4.8	3.18	7.14
<b>Class</b>										
Standard 4	44	4487	33.0	24.63	42.59	8	716	5.3	2.24	11.88
Standard 5	67	5308	39.1	30.41	48.49	8	593	4.4	2.09	8.87
Standard 6	41	5065	42.4	30.59	55.21	3	314	2.6	0.34	17.44
Form 1	73	4619	32.6	25.48	40.53	8	524	3.7	1.68	7.93
Form 2	72	5096	35.4	26.39	45.61	12	1086	7.6	2.69	19.46
Form 3	81	5099	35.1	30.58	40.01	11	726	5.0	3.19	7.75
Form 4	90	5328	33.6	27.04	40.92	10	554	3.5	2.22	5.48
Form 5	80	5014	34.4	25.68	44.41	10	627	4.3	2.29	7.93
<b>School session</b>										
Morning session	369	26400	35.7	31.98	39.67	47	3396	4.6	3.06	6.84
Evening session	66	4536	31.2	21.42	43.07	9	608	4.2	1.81	9.36
Morning and evening session	113	9080	37.5	31.42	44.04	14	1137	4.7	2.24	9.60
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	23	1808	23.7	15.91	33.73	3	261	3.4	1.10	10.13
Normal (≥-2sd - ≤+1sd)	322	23005	34.6	31.14	38.30	28	1940	2.9	1.89	4.49
Overweight (>+1sd - ≤+2sd)	103	7334	36.7	28.65	45.60	21	1556	7.8	4.29	13.74
Obese (>+2sd)	100	7868	42.4	36.00	49.00	18	1384	7.5	4.42	12.29
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	38	2618	37.7	24.20	53.41	4	253	3.6	1.32	9.65
Normal (≥-2sd)	510	37397	35.4	31.58	39.40	66	4888	4.6	3.10	6.84

**Table 3.4.3 : Reasons for skipping breakfast among adolescents by socio-demographic characteristics and nutritional status**

Socio-demographic Characteristics	Reasons for skipping breakfast									
	No money					Others				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
Lower				Upper	Lower				Upper	
<b>WP Kuala Lumpur</b>	40	3311	2.9	2.05	4.20	122	8685	7.7	5.53	10.67
<b>Locality of school</b>										
Urban	40	3311	2.9	2.05	4.20	122	8685	7.7	5.53	10.67
Rural										
<b>Sex</b>										
Boys	28	2567	4.6	3.21	6.59	51	4714	8.5	5.76	12.29
Girls	12	744	1.3	0.66	2.56	71	3971	7.0	4.71	10.21
<b>Ethnicity</b>										
Malay	23	1988	2.6	1.55	4.32	55	3975	5.2	3.36	7.94
Chinese	12	906	3.4	1.57	7.35	54	3875	14.7	10.82	19.61
Indian	4	359	5.6	1.88	15.50	10	677	10.5	4.03	24.86
Bumiputera Sabah						2	108	11.4	2.22	42.08
Bumiputera Sarawak										
Others	1	58	3.4	0.44	22.02	1	50	2.9	0.46	16.79
<b>School level</b>										
Primary school	18	1691	4.3	2.82	6.56	24	2039	5.2	2.77	9.60
Secondary school	22	1620	2.2	1.40	3.44	98	6646	9.0	6.47	12.50
<b>Class</b>										
Standard 4	6	534	3.9	1.76	8.50	7	643	4.7	3.05	7.27
Standard 5	8	659	4.9	2.76	8.39	14	1061	7.8	3.67	15.83
Standard 6	4	498	4.2	2.54	6.77	3	335	2.8	0.97	7.81
Form 1	3	218	1.5	0.52	4.44	15	888	6.3	3.04	12.46
Form 2	3	162	1.1	0.25	5.00	16	1155	8.0	3.63	16.83
Form 3	4	288	2.0	0.81	4.78	26	1630	11.2	6.66	18.36
Form 4	5	421	2.7	0.93	7.39	19	1214	7.7	4.10	13.88
Form 5	7	530	3.6	1.72	7.52	22	1759	12.1	7.03	19.98
<b>School session</b>										
Morning session	24	2007	2.7	1.83	4.01	78	5522	7.5	5.21	10.61
Evening session	7	495	3.4	0.97	11.23	24	1696	11.7	6.01	21.46
Morning and evening session	9	810	3.3	2.01	5.52	20	1467	6.1	3.32	10.81
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	2	182	2.4	0.30	16.40	6	490	6.4	2.08	18.10
Normal (≥-2sd - ≤+1sd)	29	2405	3.6	2.38	5.48	74	5124	7.7	5.43	10.84
Overweight (>+1sd - ≤+2sd)	3	213	1.1	0.33	3.36	27	1966	9.8	6.38	14.89
Obese (>+2sd)	6	512	2.8	1.15	6.46	15	1105	6.0	3.40	10.22
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	1	160	2.3	0.30	15.73	9	585	8.4	4.51	15.19
Normal (≥-2sd)	39	3151	3.0	2.06	4.29	113	8100	7.7	5.38	10.80

Table 3.4.4 : Prevalence of lunch per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	1164	87934	49.52	41.88	57.18	1155	83005	46.75	39.54	54.09
<b>Locality of school</b>										
Urban	1164	87934	49.52	41.88	57.18	1155	83005	46.75	39.54	54.09
Rural										
<b>Sex</b>										
Boys	499	47158	52.71	43.99	61.27	423	38918	43.50	35.48	51.88
Girls	665	40776	46.28	38.14	54.63	732	44087	50.04	42.28	57.80
<b>Ethnicity</b>										
Malay	525	39953	38.67	34.69	42.81	802	58721	56.84	52.30	61.27
Chinese	509	39056	68.24	58.36	76.70	232	16798	29.35	21.39	38.81
Indian	101	6604	54.69	47.49	61.70	81	4954	41.03	33.85	48.61
Bumiputera Sabah	6	515	39.60	15.92	69.43	12	743	57.11	27.90	82.09
Bumiputera Sarawak	3	273	37.77	12.75	71.61	6	403	55.82	26.19	81.82
Others	20	1533	52.52	30.40	73.69	22	1386	47.48	26.31	69.60
<b>School level</b>										
Primary school	366	34153	52.26	36.62	67.47	300	28694	43.90	30.39	58.39
Secondary school	798	53780	47.93	40.32	55.63	855	54311	48.40	40.73	56.15
<b>Class</b>										
Standard 4	130	12023	53.85	37.01	69.85	97	9410	42.14	28.14	57.54
Standard 5	139	10629	48.76	31.70	66.12	127	10158	46.60	31.75	62.08
Standard 6	97	11501	54.17	35.94	71.35	76	9126	42.98	26.00	61.79
Form 1	155	10244	44.11	34.01	54.73	185	12021	51.76	40.11	63.23
Form 2	139	10728	49.40	41.08	57.75	150	9921	45.68	36.94	54.69
Form 3	164	10749	47.99	38.72	57.41	173	11009	49.15	40.43	57.93
Form 4	175	10849	48.91	39.54	58.36	177	10684	48.17	39.07	57.40
Form 5	165	11209	49.40	36.05	62.83	170	10676	47.05	34.89	59.57
<b>School session</b>										
Morning session	775	57544	49.36	41.72	57.02	761	54863	47.06	40.23	54.00
Evening session	175	12415	51.64	38.80	64.26	162	10414	43.31	29.14	58.67
Morning and evening session	214	17974	48.72	35.36	62.27	231	17679	47.92	34.37	61.79
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	85	7020	53.63	42.21	64.67	75	5686	43.43	31.48	56.19
Normal (≥-2sd - ≤+1sd)	734	53912	50.49	41.68	59.27	691	48984	45.87	37.90	54.07
Overweight (>+1sd - ≤+2sd)	177	13757	46.57	37.59	55.78	210	14873	50.35	41.44	59.24
Obese (>+2sd)	168	13245	47.22	40.90	53.63	177	13350	47.60	40.48	54.82
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	68	4829	45.02	33.73	56.84	77	5526	51.51	40.70	62.17
Normal (≥-2sd)	1096	83104	49.83	41.99	57.68	1077	77412	46.42	38.99	54.01

**Table 3.4.6 : Prevalence of lunch per week among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Lunch frequency per week				
	Did not take lunch				
	Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	86	6629	3.73	2.67	5.20
<b>Locality of school</b>					
Urban	86	6629	3.73	2.67	5.20
Rural					
<b>Sex</b>					
Boys	35	3388	3.79	2.40	5.93
Girls	51	3241	3.68	2.45	5.48
<b>Ethnicity</b>					
Malay	56	4640	4.49	3.04	6.59
Chinese	20	1383	2.42	1.30	4.46
Indian	8	517	4.28	1.96	9.08
Bumiputera Sabah	1	43	3.29	0.35	24.71
Bumiputera Sarawak	1	46	6.41	0.76	38.02
Others					
<b>School level</b>					
Primary school	25	2510	3.84	1.99	7.29
Secondary school	61	4119	3.67	2.55	5.25
<b>Class</b>					
Standard 4	9	895	4.01	2.43	6.53
Standard 5	11	1010	4.64	1.50	13.41
Standard 6	5	604	2.85	1.34	5.93
Form 1	14	958	4.13	2.38	7.06
Form 2	15	1070	4.93	3.08	7.80
Form 3	9	639	2.85	1.23	6.48
Form 4	11	646	2.91	1.69	4.98
Form 5	12	806	3.55	1.47	8.30
<b>School session</b>					
Morning session	54	4177	3.58	2.51	5.10
Evening session	17	1215	5.05	2.97	8.47
Morning and evening session	15	1237	3.35	1.49	7.39
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	4	385	2.94	1.12	7.51
Normal (≥-2sd - ≤+1sd)	50	3882	3.64	2.46	5.34
Overweight (>+1sd - ≤+2sd)	14	908	3.07	1.49	6.26
Obese (>+2sd)	18	1453	5.18	3.21	8.27
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	6	373	3.48	1.38	8.47
Normal (≥-2sd)	80	6256	3.75	2.60	5.39

Table 3.4.5 : Source of food for lunch among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food for lunch									
	Prepared at home					School canteen				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1276	93767	55.3	50.71	59.79	598	44388	26.2	22.51	30.20
<b>Locality of school</b>										
Urban	1276	93767	55.3	50.71	59.79	598	44388	26.2	22.51	30.20
Rural										
<b>Sex</b>										
Boys	491	45356	53.3	48.39	58.20	242	22985	27.0	21.78	33.00
Girls	785	48411	57.3	51.14	63.18	356	21403	25.3	20.34	31.03
<b>Ethnicity</b>										
Malay	751	56086	57.1	52.01	62.11	358	26296	26.8	21.86	32.37
Chinese	339	25710	46.6	40.97	52.29	195	15104	27.4	23.36	31.79
Indian	140	8669	76.1	68.40	82.47	30	2063	18.1	12.56	25.42
Bumiputera Sabah	9	574	45.6	23.88	69.18	6	379	30.1	15.47	50.42
Bumiputera Sarawak	8	630	93.2	56.38	99.31	1	46	6.8	0.69	43.62
Others	29	2098	71.8	47.73	87.71	8	499	17.1	8.49	31.37
<b>School level</b>										
Primary school	393	37147	59.6	51.87	66.84	173	16300	26.1	21.62	31.23
Secondary school	883	56620	52.8	47.69	57.85	425	28088	26.2	21.16	31.94
<b>Class</b>										
Standard 4	131	12182	57.1	44.60	68.68	68	6616	31.0	22.53	40.94
Standard 5	159	12624	61.6	48.43	73.33	66	5150	25.1	19.49	31.80
Standard 6	103	12341	60.1	54.22	65.78	39	4534	22.1	13.73	33.57
Form 1	185	12278	55.6	48.74	62.33	118	7436	33.7	25.38	43.17
Form 2	121	8655	42.6	31.81	54.12	91	6357	31.3	22.85	41.16
Form 3	194	12305	56.9	45.38	67.75	71	4707	21.8	14.23	31.82
Form 4	209	12343	57.4	47.77	66.54	72	4427	20.6	13.89	29.43
Form 5	174	11039	50.8	42.46	59.08	73	5162	23.7	16.18	33.44
<b>School session</b>										
Morning session	875	63451	56.9	50.38	63.10	349	26438	23.7	19.50	28.46
Evening session	157	10619	47.3	37.81	57.03	125	8040	35.8	26.90	45.86
Morning and evening session	244	19698	55.5	46.68	63.97	124	9910	27.9	20.56	36.70
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	86	6683	53.7	46.71	60.62	45	3593	28.9	22.19	36.66
Normal (≥-2sd - ≤+1sd)	768	55181	54.0	49.36	58.55	378	27731	27.1	22.78	31.98
Overweight (>+1sd - ≤+2sd)	226	16760	58.5	52.86	64.00	92	6851	23.9	19.11	29.52
Obese (>+2sd)	194	15031	57.4	47.71	66.47	83	6213	23.7	16.99	32.05
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	87	6350	61.8	47.23	74.56	38	2606	25.4	16.50	36.91
Normal (≥-2sd)	1188	87350	54.9	50.31	59.31	560	41782	26.2	22.53	30.31

Table 3.4.5 : Source of food for lunch among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food for lunch									
	Restaurant/ kiosk					Hostel				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	282	20899	12.3	9.39	16.01	67	4374	2.6	1.05	6.21
<b>Locality of school</b>										
Urban	282	20899	12.3	9.39	16.01	67	4374	2.6	1.05	6.21
Rural										
<b>Sex</b>										
Boys	113	10749	12.6	8.54	18.30	23	1987	2.3	0.75	7.07
Girls	169	10150	12.0	9.05	15.76	44	2387	2.8	0.87	8.75
<b>Ethnicity</b>										
Malay	113	8689	8.9	7.11	10.97	58	3731	3.8	1.22	11.18
Chinese	158	11274	20.4	13.84	29.10	4	365	0.7	0.10	4.31
Indian	8	607	5.3	2.83	9.81	1	47	0.4	0.05	3.03
Bumiputera Sabah	2	237	18.9	3.68	58.54					
Bumiputera Sarawak										
Others	8	91	17.1	8.49	31.37	1	232	3.1	0.36	22.38
<b>School level</b>										
Primary school	61	5814	9.3	6.65	12.93	4	365	0.6	0.08	4.19
Secondary school	221	15084	14.1	10.14	19.19	63	4009	3.7	1.49	9.06
<b>Class</b>										
Standard 4	131	1742	57.1	44.60	68.68	68	83	31.0	22.53	40.94
Standard 5	25	1831	8.9	4.85	15.89	1	71	0.3	0.05	2.37
Standard 6	18	2242	10.9	5.78	19.69	2	211	1.0	0.15	6.87
Form 1	25	1757	8.0	4.85	12.81	5	300	1.4	0.33	5.50
Form 2	31	2373	11.7	8.77	15.40	38	2526	12.4	4.67	29.15
Form 3	44	2944	13.6	7.87	22.54	16	960	4.4	0.86	20.02
Form 4	54	3689	17.2	10.26	27.29	1	39	0.2	0.02	1.50
Form 5	67	4320	19.9	14.92	25.97	3	184	0.8	0.20	3.54
<b>School session</b>										
Morning session	205	14962	13.4	9.92	17.87	43	2663	2.4	0.84	6.62
Evening session	33	2563	11.4	7.49	17.04	16	1160	5.2	1.38	17.52
Morning and evening session	43	3324	9.4	6.71	12.92	8	551	1.6	0.53	4.44
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	16	1303	10.5	5.96	17.78	1	100	0.8	0.10	6.38
Normal (≥-2sd - ≤+1sd)	186	13412	13.1	9.79	17.37	40	2579	2.5	0.98	6.31
Overweight (>+1sd - ≤+2sd)	40	2905	10.1	7.19	14.15	14	911	3.2	1.20	8.14
Obese (>+2sd)	40	3278	12.5	8.62	17.82	12	785	3.0	1.32	6.65
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	12	824	8.0	3.69	16.55	4	312	3.0	0.93	9.51
Normal (≥-2sd)	270	20075	12.6	9.57	16.43	63	4062	2.6	1.00	6.33



**Table 3.4.5 : Source of food for lunch among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Source of food for lunch				
	Count	Estimated Population	Other Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	79	6160	3.6	2.81	4.69
<b>Locality of school</b>					
Urban	79	6160	3.6	2.81	4.69
Rural					
<b>Sex</b>					
Boys	42	3975	4.7	3.52	6.19
Girls	37	2185	2.6	1.63	4.08
<b>Ethnicity</b>					
Malay	41	3359	3.4	2.60	4.50
Chinese	37	2733	5.0	3.32	7.33
Indian					
Bumiputera Sabah	1	68	5.4	0.58	35.70
Bumiputera Sarawak					
Others					
<b>School level</b>					
Primary school	29	2725	4.4	3.18	5.97
Secondary school	50	3436	3.2	2.21	4.62
<b>Class</b>					
Standard 4	8	727	3.4	2.28	5.06
Standard 5	11	805	3.9	2.10	7.25
Standard 6	10	1193	5.8	4.17	8.06
Form 1	4	296	1.3	0.25	6.78
Form 2	5	410	2.0	0.73	5.49
Form 3	10	704	3.3	1.75	6.00
Form 4	1	996	4.6	2.52	8.37
Form 5	16	1030	4.7	2.54	8.67
<b>School session</b>					
Morning session	54	4087	3.7	2.66	5.02
Evening session	1	58	0.3	0.04	1.71
Morning and evening session	24	2015	5.7	3.88	8.23
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	9	758	6.1	3.00	11.98
Normal (≥-2sd - ≤+1sd)	44	3298	3.2	2.33	4.45
Overweight (>+1sd - ≤+2sd)	15	1203	4.2	2.48	7.04
Obese (>+2sd)	11	901	3.4	1.62	7.14
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	3	178	1.7	0.66	4.50
Normal (≥-2sd)	76	5982	3.8	2.88	4.89

Table 3.4.6 : Reasons for skipping lunch among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Reasons for skipping lunch									
	No food available					No appetite				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	144	10677	13.65	10.31	17.87	447	32247	41.24	37.33	45.26
<b>Locality of school</b>										
Urban	144	10677	13.65	10.31	17.87	447	32247	41.24	37.33	45.26
Rural										
<b>Sex</b>										
Boys	69	6336	17.06	12.30	23.17	151	14010	37.72	34.32	41.25
Girls	75	4341	10.57	7.02	15.62	296	18238	44.42	38.17	50.85
<b>Ethnicity</b>										
Malay	114	8687	15.32	11.69	19.81	327	24039	42.39	37.77	47.14
Chinese	20	1277	8.54	4.96	14.32	72	5271	35.25	28.44	42.73
Indian	6	390	8.67	3.88	18.24	29	1767	39.28	26.83	53.30
Bumiputera Sabah	2	182	25.37	4.69	70.13	5	291	40.52	22.65	61.31
Bumiputera Sarawak	1	91	27.86	2.89	83.35	4	236	72.14	16.65	97.11
Others	1	50	5.02	0.57	32.58	10	644	64.87	41.38	82.85
<b>School level</b>										
Primary school	39	3765	13.92	9.24	20.44	119	11624	42.99	34.25	52.18
Secondary school	105	6912	13.51	9.28	19.27	328	20623	40.31	37.16	43.55
<b>Class</b>										
Standard 4	15	1374	15.11	8.49	25.46	39	3893	42.82	26.58	60.77
Standard 5	12	1005	10.81	5.47	20.25	52	4322	46.49	33.78	59.67
Standard 6	12	1386	16.01	7.94	29.65	28	3410	39.40	36.77	42.09
Form 1	23	1519	13.66	9.40	19.43	71	4484	40.31	34.68	46.20
Form 2	12	786	8.59	4.19	16.81	66	4288	46.84	38.93	54.92
Form 3	16	1008	10.03	5.10	18.77	75	4853	48.30	39.52	57.20
Form 4	27	1794	17.00	10.58	26.18	63	3799	36.01	31.80	40.45
Form 5	27	1806	17.57	10.31	28.32	53	3198	31.12	23.24	40.26
<b>School session</b>										
Morning session	103	7500	14.62	10.64	19.75	285	20665	40.28	35.22	45.55
Evening session	12	772	7.80	2.95	19.04	71	4507	45.50	37.59	53.65
Morning and evening session	29	2404	14.19	10.33	19.19	91	7075	41.77	36.03	47.74
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	12	944	17.35	8.43	32.37	34	2478	45.54	32.37	59.37
Normal (≥-2sd - ≤+1sd)	94	7014	15.21	11.04	20.60	273	19539	42.38	37.55	47.37
Overweight (>+1sd - ≤+2sd)	22	1454	10.98	7.24	16.32	80	5698	43.01	33.99	52.52
Obese (>+2sd)	16	1265	9.47	4.71	18.10	59	4488	33.58	26.52	41.46
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	12	829	15.76	8.42	27.59	30	2193	41.72	32.09	52.02
Normal (≥-2sd)	132	9848	13.50	10.28	17.53	417	30054	41.20	37.14	45.39

Table 3.4.6 : Reasons for skipping lunch among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Reasons for skipping lunch									
	No time					On diet/ control body weight				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	215	15243	19.49	16.87	22.41	125	8749	11.19	9.68	12.90
<b>Locality of school</b>										
Urban	215	15243	19.49	16.87	22.41	125	8749	11.19	9.68	12.90
Rural										
<b>Sex</b>										
Boys	75	6838	18.41	14.78	22.70	36	3488	9.39	6.62	13.16
Girls	140	8405	20.47	16.57	25.02	89	5262	12.82	11.15	14.69
<b>Ethnicity</b>										
Malay	152	10940	19.29	16.29	22.70	80	5982	10.55	8.70	12.74
Chinese	45	3191	21.34	14.80	29.76	28	1721	11.51	7.74	16.78
Indian	14	879	19.55	10.07	34.51	12	793	17.63	11.05	26.93
Bumiputera Sabah	2	89	12.40	2.63	42.61	2	100	13.86	2.90	46.48
Bumiputera Sarawak										
Others	2	145	14.60	4.02	41.09	3	154	15.51	7.70	28.76
<b>School level</b>										
Primary school	60	5704	21.09	16.00	27.27	27	2693	9.96	8.77	11.28
Secondary school	155	9540	18.65	15.84	21.83	98	6057	11.84	9.79	14.25
<b>Class</b>										
Standard 4	21	2047	22.51	13.71	34.69	6	585	6.43	2.45	15.83
Standard 5	26	2019	21.72	15.59	29.43	11	911	9.80	7.06	13.44
Standard 6	13	1638	18.93	11.48	29.59	10	1197	13.83	6.85	25.95
Form 1	33	2126	19.11	11.45	30.17	17	1132	10.17	4.78	20.36
Form 2	25	1599	17.47	10.98	26.64	19	1351	14.76	9.10	23.03
Form 3	25	1580	15.73	10.09	23.68	20	1115	11.10	5.48	21.20
Form 4	34	2046	19.39	15.45	24.05	25	1333	12.64	8.53	18.33
Form 5	38	2188	21.29	14.14	30.76	17	1125	10.95	6.25	18.48
<b>School session</b>										
Morning session	133	9467	18.45	14.96	22.55	89	6206	12.10	10.06	14.49
Evening session	34	2232	22.53	14.62	33.06	13	854	8.62	5.24	13.86
Morning and evening session	47	3495	20.63	15.58	26.80	23	1690	9.98	7.50	13.16
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	11	915	16.82	9.39	28.30	2	176	3.23	0.83	11.80
Normal (≥-2sd - ≤+1sd)	127	9043	19.62	17.07	22.44	67	4184	9.08	7.11	11.52
Overweight (>+1sd - ≤+2sd)	33	2228	16.82	11.01	24.84	29	2105	15.89	10.77	22.83
Obese (>+2sd)	44	3057	22.87	16.68	30.51	27	2284	17.09	12.36	23.15
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	18	1295	24.63	14.59	38.47	7	365	6.95	2.85	15.98
Normal (≥-2sd)	197	13949	19.12	16.26	22.36	118	8384	11.49	10.03	13.14

Table 3.4.6: Reasons for skipping lunch among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Reasons for skipping lunch									
	No money					Others				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	75	5681	7.27	5.84	9.00	76	5598	7.16	5.25	9.70
<b>Locality of school</b>										
Urban	75	5681	7.27	5.84	9.00	76	5598	7.16	5.25	9.70
Rural										
<b>Sex</b>										
Boys	35	3242	8.73	6.55	11.54	34	3228	8.69	5.85	12.73
Girls	40	2439	5.94	4.23	8.29	42	2370	5.77	4.05	8.18
<b>Ethnicity</b>										
Malay	54	4182	7.37	5.74	9.43	39	2881	5.08	3.17	8.05
Chinese	19	1721	9.31	5.91	14.37	28	1392	14.04	9.85	19.63
Indian	2	108	2.39	0.57	9.54	8	562	12.48	5.44	26.12
Bumiputera Sabah						1	56	7.85	0.77	48.26
Bumiputera Sarawak										
Others										
<b>School level</b>										
Primary school	22	2186	8.09	5.95	10.90	12	1070	3.96	1.96	7.83
Secondary school	53	3495	6.83	5.12	9.05	64	4528	8.85	7.18	10.87
<b>Class</b>										
Standard 4	8	768	8.45	7.47	9.55	5	424	4.67	0.92	20.59
Standard 5	8	640	6.89	2.99	15.07	5	400	4.30	1.84	9.70
Standard 6	6	778	8.99	4.09	18.61	2	246	2.84	1.01	7.72
Form 1	16	1158	10.41	8.00	13.44	10	705	6.34	2.77	13.83
Form 2	3	151	1.65	0.33	7.75	13	979	10.69	5.85	18.75
Form 3	8	522	5.20	2.45	10.68	14	969	9.65	5.68	15.91
Form 4	15	1018	9.65	4.23	20.51	10	560	5.31	2.88	9.59
Form 5	11	646	6.28	3.13	12.22	17	1315	12.80	6.54	23.53
<b>School session</b>										
Morning session	50	3800	7.41	5.42	10.05	52	3663	7.14	5.14	9.83
Evening session	13	888	8.96	6.46	12.31	9	653	6.59	2.42	16.72
Morning and evening session	12	993	5.86	3.30	10.20	15	1283	7.57	3.74	14.71
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	5	361	6.64	3.01	14.01	6	567	10.42	3.73	25.84
Normal (≥-2sd - ≤+1sd)	47	3505	7.60	5.53	10.37	40	2814	6.10	4.01	9.19
Overweight (>+1sd - ≤+2sd)	6	359	2.71	1.10	6.54	18	1402	10.59	5.62	19.07
Obese (>+2sd)	17	1455	10.89	6.32	18.13	12	816	6.10	3.11	11.62
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	3	258	4.90	1.37	16.02	5	317	6.04	2.62	13.29
Normal (≥-2sd)	72	5423	7.44	5.97	9.22	71	5281	7.24	5.26	9.89

Table 3.4.7 : Prevalence of dinner per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Dinner frequency per week									
	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
Lower				Upper	Lower				Upper	
<b>WP Kuala Lumpur</b>	1451	109114	61.6	52.71	69.75	875	63057	35.6	27.93	44.07
<b>Locality of school</b>										
Urban	1451	109114	61.6	52.71	69.75	875	63057	35.6	27.93	44.07
Rural										
<b>Sex</b>										
Boys	607	56894	63.8	53.42	73.09	323	30032	33.7	24.97	43.69
Girls	844	52220	59.3	50.21	67.81	552	33026	37.5	29.59	46.16
<b>Ethnicity</b>										
Malay	647	49481	47.9	43.48	52.43	686	50314	48.7	44.65	52.85
Chinese	637	48508	85.0	78.96	89.53	105	7507	13.2	9.14	18.57
Indian	124	7968	66.7	58.91	73.72	59	3658	30.6	24.09	38.05
Bumiputera Sabah	12	896	68.9	49.51	83.33	7	405	31.1	16.67	50.49
Bumiputera Sarawak	5	349	48.4	26.01	71.40	5	373	51.6	28.60	73.99
Others	26	1911	65.4	42.56	82.88	13	801	27.4	13.20	48.45
<b>School level</b>										
Primary school	444	41291	63.5	45.21	78.60	227	22238	34.2	19.49	52.75
Secondary school	1007	67822	60.5	51.13	69.09	648	40819	36.4	28.76	44.78
<b>Class</b>										
Standard 4	148	13629	61.3	41.26	78.10	83	8207	36.9	20.92	56.39
Standard 5	179	13960	64.5	46.74	78.95	88	7089	32.7	18.60	50.90
Standard 6	117	13702	64.9	43.12	81.86	56	6942	32.9	16.32	55.18
Form 1	215	14352	62.0	47.55	74.51	131	8350	36.0	24.50	49.46
Form 2	171	12671	58.4	46.75	69.14	125	8540	39.3	29.64	49.97
Form 3	199	13003	58.2	49.00	66.88	131	8468	37.9	30.31	46.14
Form 4	218	13729	61.8	52.28	70.47	132	7642	34.4	26.33	43.47
Form 5	204	14068	61.9	47.78	74.22	129	7819	34.4	23.13	47.74
<b>School session</b>										
Morning session	938	70272	60.4	51.38	68.79	587	41925	36.0	28.31	44.58
Evening session	251	17443	72.7	54.84	85.35	101	6507	27.1	14.55	44.84
Morning and evening session	261	21348	58.0	45.13	69.86	187	14625	39.7	28.02	52.74
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	100	7915	61.4	48.25	73.11	58	4609	35.8	24.58	48.74
Normal (>=2sd - <=+1sd)	923	67944	63.6	54.72	71.64	512	36241	33.9	26.35	42.42
Overweight (>+1sd - <=+2sd)	223	17233	58.5	47.32	68.88	168	11766	39.9	30.09	50.70
Obese (>+2sd)	204	15954	57.2	47.58	66.31	136	10397	37.3	29.03	46.34
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	86	6381	59.5	44.70	72.72	60	4067	37.9	24.72	53.17
Normal (>=2sd)	1364	102665	61.7	52.69	69.98	815	58990	35.5	27.73	44.02

**Table 3.4.7 : Prevalence of dinner per week among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Dinner frequency per week				
	Did not take dinner				
	Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	74	5003	2.8	1.93	4.11
<b>Locality of school</b>					
Urban	74	5003	2.8	1.93	4.11
Rural					
<b>Sex</b>					
Boys	23	2203	2.5	1.40	4.33
Girls	51	2801	3.2	2.22	4.54
<b>Ethnicity</b>					
Malay	49	3425	3.3	2.10	5.21
Chinese	17	1054	1.8	0.89	3.78
Indian	5	316	2.6	1.05	6.50
Bumiputera Sabah					
Bumiputera Sarawak					
Others	3	208	7.1	2.16	21.03
<b>School level</b>					
Primary school	16	1477	2.3	1.51	3.41
Secondary school	58	3526	3.1	1.91	5.12
<b>Class</b>					
Standard 4	4	405	1.8	0.69	4.72
Standard 5	8	606	2.8	1.20	6.37
Standard 6	4	466	2.2	1.24	3.91
Form 1	7	465	2.0	0.74	5.35
Form 2	7	495	2.3	0.97	5.30
Form 3	15	868	3.9	1.98	7.49
Form 4	14	850	3.8	2.13	6.76
Form 5	15	848	3.7	1.89	7.24
<b>School session</b>					
Morning session	61	4116	3.5	2.42	5.15
Evening session	1	50	0.2	0.02	1.72
Morning and evening session	12	838	2.3	1.21	4.24
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	4	363	2.8	1.00	7.68
Normal (≥-2sd - ≤+1sd)	40	2646	2.5	1.47	4.14
Overweight (>+1sd - ≤+2sd)	9	455	1.5	0.70	3.37
Obese (>+2sd)	21	1539	5.5	3.52	8.54
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	5	280	2.6	1.02	6.51
Normal (≥-2sd)	69	4724	2.8	1.93	4.16

Table 3.4.8 : Source of food for dinner among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Source of food for dinner									
	Prepared at home					Restaurant/ kiosk				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1793	132393	77.9	74.51	80.93	353	26327	15.5	13.29	17.97
<b>Locality of school</b>										
Urban	1793	132393	77.9	74.51	80.93	353	26327	15.5	13.29	17.97
Rural										
<b>Sex</b>										
Boys	691	64270	75.5	71.35	79.16	151	14472	17.0	13.75	20.82
Girls	1102	68123	80.3	76.57	83.59	202	11855	14.0	11.51	16.87
<b>Ethnicity</b>										
Malay	1008	75454	76.7	72.63	80.37	203	15249	15.5	13.12	18.23
Chinese	573	43211	77.9	70.16	84.11	125	9271	16.7	11.75	23.24
Indian	155	9724	84.5	78.81	88.84	20	1420	12.3	8.16	18.23
Bumiputera Sabah	14	961	77.9	58.34	89.88	3	226	18.3	6.56	41.81
Bumiputera Sarawak	10	723	100.0	0.00	100.00					
Others	33	2320	85.6	60.81	95.77	2	161	5.9	1.32	22.80
<b>School level</b>										
Primary school	547	51740	82.2	77.65	86.05	92	8687	13.8	10.30	18.27
Secondary school	1246	80652	75.3	71.72	78.62	261	17640	16.5	14.04	19.25
<b>Class</b>										
Standard 4	188	17696	82.3	77.35	86.29	31	2952	13.7	10.66	17.49
Standard 5	217	17210	82.9	76.07	88.09	39	3004	14.5	9.25	21.93
Standard 6	142	16834	81.5	73.94	87.31	22	2731	13.2	7.70	21.80
Form 1	270	17623	77.8	69.47	84.40	52	3487	15.4	10.19	22.59
Form 2	193	13570	66.2	56.46	74.76	50	3793	18.5	12.66	26.26
Form 3	243	15555	74.0	65.38	81.11	48	3234	15.4	12.14	19.31
Form 4	277	16976	80.0	74.03	84.83	55	3260	15.4	12.07	19.33
Form 5	263	16929	78.1	71.37	83.58	56	3867	17.8	13.42	23.31
<b>School session</b>										
Morning session	1174	86244	77.8	74.13	81.14	231	17018	15.4	13.08	17.96
Evening session	261	17276	73.3	67.88	78.10	57	4239	18.0	11.63	26.77
Morning and evening session	358	28872	81.2	75.32	85.94	64	5020	14.1	10.58	18.59
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	134	10586	84.9	75.43	91.16	17	1270	10.2	5.34	18.56
Normal (≥-2sd - ≤+1sd)	1104	79967	77.8	73.88	81.36	223	16348	15.9	13.31	18.92
Overweight (>+1sd - ≤+2sd)	302	22229	77.7	72.19	82.45	52	3832	13.4	9.44	18.69
Obese (>+2sd)	251	19498	74.7	68.72	79.95	61	4878	18.7	14.66	23.54
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	113	8070	78.5	71.06	84.43	20	1414	13.8	9.01	20.43
Normal (≥-2sd)	1679	124255	77.8	74.26	81.04	333	24914	15.6	13.28	18.25

Table 3.4.8 : Source of food for dinner among adolescents by socio-demographic characteristics and nutritional status

Socio-demographic Characteristics	Source of food for dinner									
	Hostel					Others				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	74	5093	3.0	1.48	5.98	79	6169	3.6	2.98	4.42
<b>Locality of school</b>										
Urban	74	5093	3.0	1.48	5.98	79	6169	3.6	2.98	4.42
Rural										
<b>Sex</b>										
Boys	31	2726	3.2	1.41	7.11	38	3696	4.3	3.21	5.85
Girls	43	2367	2.8	0.95	7.90	41	2473	2.9	2.18	3.88
<b>Ethnicity</b>										
Malay	62	4235	4.3	1.75	10.20	42	3407	3.5	2.68	4.47
Chinese	6	518	0.9	0.38	2.28	32	2458	4.4	3.08	6.34
Indian	2	120	1.0	0.24	4.47	4	246	2.1	0.83	5.41
Bumiputera Sabah	1	46	3.8	0.51	22.75					
Bumiputera Sarawak										
Others	3	174	6.4	0.89	34.29	1	57	2.1	0.31	13.06
<b>School level</b>										
Primary school	5	456	0.7	0.35	1.51	19	2033	3.2	2.49	4.18
Secondary school	69	4637	4.3	2.13	8.59	60	4136	3.9	2.97	5.00
<b>Class</b>										
Standard 4	1	128	0.6	0.11	3.05	7	737	3.4	1.80	6.43
Standard 5	3	223	1.1	0.42	2.73	4	322	1.6	0.80	3.00
Standard 6	1	105	0.5	0.07	3.53	8	974	4.7	3.55	6.24
Form 1	9	606	2.7	1.24	5.69	14	930	4.1	2.29	7.27
Form 2	35	2347	11.5	4.19	27.68	11	783	3.8	2.73	5.32
Form 3	16	1022	4.9	1.32	16.36	17	1206	5.7	3.25	9.94
Form 4	5	387	1.8	0.61	5.31	11	606	2.9	1.35	5.94
Form 5	4	275	1.3	0.28	5.49	7	610	2.8	1.03	7.45
<b>School session</b>										
Morning session	48	3157	2.8	1.27	6.25	54	4386	4.0	3.18	4.92
Evening session	17	1265	5.4	1.47	17.76	13	789	3.3	1.80	6.15
Morning and evening session	9	671	1.9	0.83	4.22	12	993	2.8	1.39	5.53
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	3	290	2.3	0.70	7.47	3	321	2.6	0.87	7.35
Normal (≥-2sd - ≤+1sd)	41	2812	2.7	1.30	5.68	49	3597	3.5	2.67	4.58
Overweight (>+1sd - ≤+2sd)	18	1202	4.2	1.90	9.04	15	1330	4.7	2.74	7.78
Obese (>+2sd)	12	789	3.0	1.38	6.51	12	921	3.5	1.95	6.32
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	6	443	4.3	1.99	9.11	5	354	3.4	1.40	8.23
Normal (≥-2sd)	68	4649	2.9	1.40	5.97	74	5815	3.6	2.94	4.50



Table 3.4.9 : Reasons for skipping dinner among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Reasons for skipping dinner									
	No food available					No appetite				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	105	8256	13.6	10.78	17.02	419	29575	48.7	46.24	51.22
<b>Locality of school</b>										
Urban	105	8256	13.6	10.78	17.02	419	29575	48.7	46.24	51.22
Rural										
<b>Sex</b>										
Boys	54	4973	17.2	13.14	22.14	144	13385	46.2	42.33	50.21
Girls	51	3283	10.3	7.88	13.45	275	16191	51.0	48.65	53.33
<b>Ethnicity</b>										
Malay	90	7252	14.6	11.71	18.08	355	25425	51.2	47.99	54.45
Chinese	7	480	7.6	3.63	15.08	34	2472	38.9	29.08	49.75
Indian	2	175	5.1	1.14	19.98	22	1176	34.2	17.55	55.83
Bumiputera Sabah	3	157	38.7	10.48	77.33	3	195	48.1	14.63	83.40
Bumiputera Sarawak						3	207	79.8	24.03	98.02
Others	3	192	32.0	10.09	66.36	2	101	16.9	6.15	38.52
<b>School level</b>										
Primary school	37	3664	17.3	12.80	22.84	101	9957	46.9	42.28	51.52
Secondary school	68	4591	11.6	8.76	15.30	318	19618	49.7	46.88	52.58
<b>Class</b>										
Standard 4	17	1619	19.5	13.58	27.09	37	3664	44.0	39.86	48.32
Standard 5	11	903	14.5	10.17	20.36	40	3296	53.1	40.23	65.51
Standard 6	9	1143	17.0	6.37	38.22	24	2997	44.6	35.41	54.25
Form 1	22	1613	20.9	12.87	32.07	58	3524	45.6	34.24	57.52
Form 2	10	582	7.3	3.55	14.24	59	3940	49.1	40.84	57.45
Form 3	13	854	10.3	5.25	19.09	67	4251	51.0	41.84	60.17
Form 4	9	596	7.7	3.74	15.13	72	4280	55.2	48.02	62.15
Form 5	14	945	12.4	5.48	25.68	62	3623	47.5	35.67	59.67
<b>School session</b>										
Morning session	64	5009	12.4	9.63	15.76	286	20293	50.1	46.28	54.00
Evening session	12	815	14.1	6.29	28.65	49	3060	53.0	41.87	63.76
Morning and evening session	29	2432	16.8	12.68	22.01	84	6222	43.1	38.12	48.18
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	17	1345	30.2	17.59	46.75	25	2105	47.3	32.47	62.60
Normal (≥-2sd - ≤+1sd)	61	4820	13.9	11.22	17.16	254	18072	52.2	47.89	56.49
Overweight (>+1sd - ≤+2sd)	18	1333	12.3	7.54	19.50	75	4761	44.0	35.81	52.57
Obese (>+2sd)	9	758	7.0	4.27	11.40	64	4592	42.7	33.28	52.60
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	10	762	19.7	12.33	29.96	25	1710	44.2	29.50	59.95
Normal (≥-2sd)	95	7493	13.2	10.42	16.56	394	27865	49.0	46.61	51.47

Table 3.4.9 : Reasons for skipping dinner among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Socio-demographic Characteristics	Reasons for skipping dinner									
	No time					On diet/ control body weight				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	80	6200	10.22	8.17	12.70	163	10901	17.96	14.90	21.49
<b>Locality of school</b>										
Urban	80	6200	10.22	8.17	12.70	163	10901	17.96	14.90	21.49
Rural										
<b>Sex</b>										
Boys	36	3367	11.63	8.22	16.22	41	3936	13.60	9.88	18.44
Girls	44	2833	8.92	6.65	11.88	122	6965	21.94	18.04	26.41
<b>Ethnicity</b>										
Malay	60	4663	9.39	7.28	12.05	118	8226	16.57	13.79	19.78
Chinese	10	741	11.66	7.03	18.74	24	1381	21.74	13.97	32.22
Indian	8	644	18.70	10.70	30.62	16	1035	30.06	16.01	49.22
Bumiputera Sabah						1	53	13.15	1.45	60.94
Bumiputera Sarawak										
Others	2	153	25.46	8.57	55.45	3	154	25.69	14.54	41.27
<b>School level</b>										
Primary school	30	2842	13.38	9.73	18.11	28	2938	13.83	8.94	20.78
Secondary school	50	3358	8.51	6.89	10.48	135	7963	20.18	17.47	23.20
<b>Class</b>										
Standard 4	14	1465	17.61	11.73	25.60	10	1021	12.28	7.38	19.74
Standard 5	12	877	14.12	6.43	28.22	6	469	7.55	4.81	11.66
Standard 6	4	500	7.44	1.92	24.86	12	1448	21.57	9.00	43.33
Form 1	6	335	4.34	1.92	9.53	25	1564	20.25	16.18	25.04
Form 2	8	564	7.03	2.92	15.97	24	1747	21.77	13.41	33.36
Form 3	13	883	10.60	6.39	17.10	25	1371	16.46	10.03	25.85
Form 4	8	470	6.06	2.35	14.75	34	1696	21.87	16.78	27.98
Form 5	15	1106	14.51	7.44	26.37	27	1585	20.80	12.49	32.58
<b>School session</b>										
Morning session	50	3752	9.27	7.06	12.08	117	7752	19.15	16.20	22.51
Evening session	9	587	10.16	5.99	16.72	12	704	12.19	4.78	27.71
Morning and evening session	21	1861	12.89	7.82	20.51	34	2445	16.93	10.70	25.73
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	4	381	8.56	2.51	25.35	2	200	4.49	1.19	15.53
Normal (≥-2sd - ≤+1sd)	46	3394	9.80	7.36	12.95	87	5370	15.51	11.31	20.90
Overweight (>+1sd - ≤+2sd)	13	1150	10.63	6.44	17.04	36	2283	21.11	16.12	27.15
Obese (>+2sd)	17	1275	11.85	5.97	22.14	38	3048	28.32	19.70	38.88
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	5	315	8.14	2.51	23.37	7	336	8.69	3.77	18.76
Normal (≥-2sd)	75	5885	10.36	8.13	13.11	156	10564	18.59	15.51	22.13

Table 3.4.9 : Reasons for skipping dinner among adolescents by socio-demographic characteristics and nutritional status

Socio-demographic Characteristics	Reasons for skipping dinner									
	No money					Others				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	16	1187	1.96	1.00	3.80	62	4574	7.54	6.29	9.01
<b>Locality of school</b>										
Urban	16	1187	1.96	1.00	3.80	62	4574	7.54	6.29	9.01
Rural										
<b>Sex</b>										
Boys	7	634	2.19	0.90	5.22	28	2648	9.15	6.63	12.50
Girls	9	554	1.74	0.80	3.78	34	1925	6.06	4.22	8.65
<b>Ethnicity</b>										
Malay	10	783	1.58	0.78	3.18	43	3286	6.62	5.44	8.03
Chinese	5	327	5.15	2.02	12.55	14	950	14.97	10.17	21.49
Indian	1	76	2.22	0.25	17.11	5	337	9.78	4.78	18.98
Bumiputera Sabah										
Bumiputera Sarawak										
Others										
<b>School level</b>										
Primary school	6	513	2.41	0.59	9.32	13	1329	6.26	4.66	8.35
Secondary school	10	675	1.71	1.00	2.91	49	3245	8.23	6.73	10.02
<b>Class</b>										
Standard 4						6	549	6.60	3.72	11.44
Standard 5	5	399	6.42	2.08	18.14	3	267	4.31	2.14	8.47
Standard 6	1	114	1.70	0.23	11.38	4	513	7.63	4.26	13.30
Form 1						11	685	8.87	4.97	15.35
Form 2	2	224	2.79	0.69	10.55	14	965	12.03	8.02	17.67
Form 3	1	76	0.91	0.12	6.42	12	893	10.72	6.26	17.75
Form 4	5	284	3.66	1.69	7.74	7	429	5.54	2.57	11.51
Form 5	2	91	1.19	0.26	5.25	5	272	3.57	1.73	7.24
<b>School session</b>										
Morning session	12	803	1.98	0.97	4.00	41	2863	7.07	5.29	9.41
Evening session	1	115	1.99	0.21	16.67	7	497	8.61	4.61	15.52
Morning and evening session	21	1861	12.89	7.82	20.51	34	2445	16.93	10.70	25.73
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	2	123	2.76	0.62	11.54	5	298	6.69	2.35	17.58
Normal (≥-2sd - ≤+1sd)	11	832	2.40	1.21	4.71	31	2128	6.15	4.60	8.17
Overweight (>+1sd - ≤+2sd)	1	76	0.71	0.08	5.72	15	1212	11.21	6.54	18.54
Obese (>+2sd)	2	155	1.44	0.30	6.60	11	936	8.69	5.88	12.68
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	2	129	3.33	0.75	13.55	9	618	15.97	7.86	29.75
Normal (≥-2sd)	14	1058	1.86	0.91	3.77	53	3956	6.96	5.70	8.47

Table 3.4.10 : Prevalence of eating and/or drinking during recess time per week among adolescents by socio-demographics and nutritional status (Cont..)

Characteristics	Frequency of eating and/or drinking during recess time per week									
	5 days					1-4 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1586	118049	66.4	60.68	71.65	739	53468	30.1	25.45	35.14
<b>Locality of school</b>										
Urban	1586	118049	66.4	60.68	71.65	739	53468	30.1	25.45	35.14
Rural										
<b>Sex</b>										
Boys	601	56032	62.5	55.98	68.58	312	29537	32.9	27.75	38.58
Girls	985	62018	70.4	64.26	75.80	427	23931	27.1	21.89	33.13
<b>Ethnicity</b>										
Malay	876	65784	63.5	57.58	69.07	469	34533	33.3	28.64	38.41
Chinese	543	40846	71.4	61.57	79.49	189	14193	24.8	17.49	33.90
Indian	113	7580	62.8	49.80	74.14	66	3789	31.4	21.93	42.66
Bumiputera Sabah	15	1005	77.2	54.99	90.41	3	205	15.8	4.37	43.41
Bumiputera Sarawak	7	569	78.8	49.14	93.44	3	153	21.2	6.56	50.86
Others	32	2265	77.6	60.27	88.74	9	596	20.4	9.67	38.06
<b>School level</b>										
Primary school	530	50033	76.3	69.53	82.01	149	14223	21.7	15.92	28.86
Secondary school	1056	68017	60.6	55.94	65.04	590	39245	35.0	31.10	39.01
<b>Class</b>										
Standard 4	184	17331	77.3	67.71	84.75	46	4431	19.8	12.85	29.18
Standard 5	211	16611	75.8	68.15	82.14	64	5069	23.1	16.36	31.68
Standard 6	135	16091	75.8	63.93	84.69	39	4723	22.2	12.63	36.16
Form 1	220	14518	62.5	54.53	69.87	119	7689	33.1	26.48	40.48
Form 2	181	12820	58.9	50.28	67.05	118	8616	39.6	30.88	49.05
Form 3	212	13595	60.9	53.19	68.02	111	7206	32.3	25.79	39.47
Form 4	229	13487	60.7	49.33	71.01	121	7617	34.3	24.49	45.61
Form 5	214	13597	59.8	51.26	67.79	121	8118	35.7	28.79	43.27
<b>School session</b>										
Morning session	1051	77644	66.5	59.79	72.64	482	34586	29.6	24.28	35.61
Evening session	225	15340	63.6	53.54	72.57	117	7891	32.7	25.05	41.41
Morning and evening session	309	25015	67.7	59.50	75.00	140	10991	29.8	23.04	37.48
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	119	9683	74.0	63.56	82.23	40	2999	22.9	15.55	32.43
Normal (≥-2sd - ≤+1sd)	989	71759	67.1	62.12	71.73	438	31424	29.4	25.37	33.75
Overweight (>+1sd - ≤+2sd)	245	18385	62.1	52.71	70.72	143	10235	34.6	26.42	43.79
Obese (>+2sd)	232	18178	64.7	57.15	71.59	117	8742	31.1	24.55	38.55
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	104	7786	72.6	62.84	80.55	40	2444	22.8	15.79	31.71
Normal (≥-2sd)	1482	110263	66.0	60.28	71.32	698	50956	30.5	25.89	35.55

**Table 3.4.10 : Prevalence of eating and/or drinking during recess time per week among adolescents by socio-demographics and nutritional status**

Characteristics	Frequency of eating and/or drinking during recess time per week				
	Never (0 day)				
	Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	83	6303	3.5	2.61	4.80
<b>Locality of school</b>					
Urban	83	6303	3.5	2.61	4.80
Rural					
<b>Sex</b>					
Boys	46	4098	4.6	3.12	6.65
Girls	37	2205	2.5	1.78	3.50
<b>Ethnicity</b>					
Malay	41	3250	3.1	2.10	4.66
Chinese	29	2197	3.8	2.65	5.53
Indian	11	706	5.8	2.77	11.92
Bumiputera Sabah	1	91	7.0	1.10	33.86
Bumiputera Sarawak					
Others	1	59	2.0	0.22	16.01
<b>School level</b>					
Primary school	14	1289	2.0	1.15	3.36
Secondary school	69	5014	4.5	3.42	5.81
<b>Class</b>					
Standard 4	7	647	2.9	1.42	5.79
Standard 5	3	225	1.0	0.28	3.65
Standard 6	4	417	2.0	0.62	6.08
Form 1	15	1017	4.4	2.45	7.70
Form 2	5	320	1.5	0.67	3.21
Form 3	22	1540	6.9	4.52	10.36
Form 4	14	1117	5.0	2.87	8.65
Form 5	13	1021	4.5	2.30	8.57
<b>School session</b>					
Morning session	58	4485	3.8	2.71	5.42
Evening session	13	893	3.7	2.21	6.14
Morning and evening session	12	925	2.5	1.39	4.47
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	5	408	3.1	1.07	8.75
Normal (≥-2sd - ≤+1sd)	50	3754	3.5	2.44	5.02
Overweight (>+1sd - ≤+2sd)	13	969	3.3	1.84	5.75
Obese (>+2sd)	15	1173	4.2	2.50	6.89
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	7	498	4.6	2.12	9.83
Normal (≥-2sd)	76	5806	3.5	2.48	4.85

Table 3.4.11 : Source of food during recess time among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food during recess time									
	Bring from home					School canteen				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	491	36764	21.7	15.72	29.24	1660	121909	72.1	64.38	78.64
<b>Locality of school</b>										
Urban	491	36764	21.7	15.72	29.24	1660	121909	72.1	64.38	78.64
Rural										
<b>Sex</b>										
Boys	184	16867	20.0	14.39	27.07	649	61373	72.7	64.95	79.31
Girls	307	19898	23.5	16.60	32.10	1011	60537	71.4	62.55	78.89
<b>Ethnicity</b>										
Malay	196	14663	14.8	12.21	17.87	1067	79741	80.6	77.51	83.30
Chinese	232	17585	32.4	20.81	46.74	416	31028	57.2	46.04	67.74
Indian	48	3429	30.6	17.76	47.45	125	7576	67.7	49.89	81.50
Bumiputera Sabah	1	46	3.8	0.54	22.55	17	1163	96.2	77.45	99.46
Bumiputera Sarawak	2	129	17.8	4.76	48.48	8	594	82.2	51.52	95.24
Others	12	913	31.9	12.75	60.05	27	1807	63.2	34.95	84.55
<b>School level</b>										
Primary school	214	19216	30.4	17.74	46.92	418	40944	64.8	47.18	79.07
Secondary school	277	17548	16.6	13.70	19.90	1242	80965	76.4	72.08	80.29
<b>Class</b>										
Standard 4	71	6445	30.1	18.05	45.79	142	13834	64.7	48.26	78.24
Standard 5	90	6829	32.1	19.60	47.92	165	13357	62.9	46.95	76.41
Standard 6	53	5942	28.8	14.17	49.89	111	13754	66.8	44.06	83.67
Form 1	69	4655	21.1	15.82	27.57	250	16166	73.3	65.18	80.08
Form 2	33	2255	10.7	7.68	14.67	231	16653	78.8	71.22	84.89
Form 3	44	2791	13.6	8.90	20.33	257	16528	80.7	74.97	85.44
Form 4	67	4026	19.3	13.45	26.88	254	15220	72.9	62.53	81.28
Form 5	64	3822	17.8	13.21	23.67	250	16398	76.6	69.57	82.39
<b>School session</b>										
Morning session	326	24104	21.8	16.13	28.84	1086	79282	71.8	63.86	78.54
Evening session	67	4575	19.8	14.74	26.07	246	16613	71.9	66.89	76.42
Morning and evening session	98	8085	22.7	12.02	38.81	327	25965	73.0	57.65	84.34
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	41	3290	26.4	17.51	37.79	106	8475	68.1	57.48	77.06
Normal (≥-2sd - ≤+1sd)	294	21407	20.9	15.29	27.98	1029	74365	72.7	65.16	79.20
Overweight (>+1sd - ≤+2sd)	90	6943	24.7	16.37	35.54	266	19095	68.0	56.42	77.71
Obese (>+2sd)	66	5125	19.5	13.38	27.52	257	19862	75.6	68.38	81.54
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	25	1817	18.1	10.95	28.31	109	7693	76.5	60.23	87.44
Normal (≥-2sd)	466	34947	22.0	15.81	29.69	1550	114148	71.8	64.10	78.36

**Table 3.4.11 : Source of food during recess time among adolescents by socio-demographic characteristics and nutritional status (Cont..)**

Characteristics	Restaurant/ kiosk					Hostel				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	76	5416	3.2	2.26	4.53	25	1719	1.0	0.44	2.35
<b>Locality of school</b>										
Urban	76	5416	3.2	2.26	4.53	25	1719	1.0	0.44	2.35
Rural										
<b>Sex</b>										
Boys	34	3061	3.6	2.43	5.39	9	751	0.9	0.35	2.26
Girls	42	2355	2.8	1.72	4.45	16	969	1.1	0.41	3.17
<b>Ethnicity</b>										
Malay	26	1832	1.9	1.04	3.28	19	1190	1.2	0.42	3.43
Chinese	46	3313	6.1	4.23	8.75	5	472	0.9	0.20	3.72
Indian	3	188	1.7	0.45	6.07					
Bumiputera Sabah										
Bumiputera Sarawak										
Others	1	84	2.9	0.45	16.81	1	57	2.0	0.30	12.10
<b>School level</b>										
Primary school	17	1448	2.3	1.02	5.05	5	433	0.7	0.13	3.60
Secondary school	59	3968	3.7	2.68	5.20	20	1286	1.2	0.46	3.14
<b>Class</b>										
Standard 4	8	669	3.1	0.79	11.55	1	83	0.4	0.05	3.17
Standard 5	6	461	2.2	0.73	6.28	2	139	0.7	0.18	2.41
Standard 6	3	318	1.5	0.44	5.25	2	211	1.0	0.14	7.08
Form 1	14	968	4.4	2.09	9.00	3	213	1.0	0.31	2.98
Form 2	11	754	3.6	1.54	8.08	10	644	3.0	0.65	13.11
Form 3	6	368	1.8	0.72	4.40	7	429	2.1	0.64	6.66
Form 4	16	1093	5.2	3.01	8.96					
Form 5	12	785	3.7	2.03	6.54					
<b>School session</b>										
Morning session	47	3353	3.0	2.00	4.59	18	1182	1.1	0.42	2.73
Evening session	19	1318	5.7	3.12	10.19	5	380	1.6	0.59	4.48
Morning and evening session	10	746	2.1	1.11	3.92	2	157	0.4	0.09	2.13
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	5	327	2.6	1.03	6.52	1	100	0.8	0.10	6.39
Normal (≥-2sd - ≤+1sd)	52	3605	3.5	2.27	5.44	17	1108	1.1	0.48	2.45
Overweight (>+1sd - ≤+2sd)	10	840	3.0	1.51	5.85	4	289	1.0	0.20	5.05
Obese (>+2sd)	9	645	2.5	1.06	5.60	3	222	0.8	0.25	2.83
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	4	246	2.4	0.89	6.53	3	256	2.5	0.59	10.27
Normal (≥-2sd)	72	5170	3.3	2.31	4.56	22	1463	0.9	0.38	2.20

**Table 3.4.11 : Source of food during recess time among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Source of food during school break time				
	Count	Estimated Population	Other Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	41	3358	2.0	1.29	3.04
<b>Locality of school</b>					
Urban	41	3358	2.0	1.29	3.04
Rural					
<b>Sex</b>					
Boys	24	2349	2.8	1.70	4.51
Girls	17	1010	1.2	0.71	2.00
<b>Ethnicity</b>					
Malay	18	1548	1.6	0.89	2.73
Chinese	23	1810	3.3	1.88	5.87
Indian					
Bumiputera Sabah					
Bumiputera Sarawak					
Others					
<b>School level</b>					
Primary school	13	1192	1.9	0.84	4.17
Secondary school	28	2167	2.0	1.25	3.33
<b>Class</b>					
Standard 4	4	356	1.7	0.63	4.31
Standard 5	6	461	2.2	0.70	6.51
Standard 6	3	375	1.8	0.45	7.12
Form 1	1	56	0.3	0.03	1.99
Form 2	10	814	3.9	2.46	5.99
Form 3	4	355	1.7	0.36	8.02
Form 4	8	535	2.6	1.39	4.67
Form 5	5	407	1.9	0.49	7.15
<b>School session</b>					
Morning session	32	2539	2.3	1.56	3.37
Evening session	3	219	0.9	0.35	2.53
Morning and evening session	6	600	1.7	0.56	4.97
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	3	261	2.1	0.65	6.51
Normal (≥-2sd - ≤+1sd)	22	1749	1.7	1.06	2.75
Overweight (>+1sd - ≤+2sd)	11	916	3.3	1.63	6.41
Obese (>+2sd)	5	433	1.6	0.67	3.99
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	1	50	0.5	0.06	3.95
Normal (≥-2sd)	40	3309	2.1	1.33	3.23



Table 3.4.12 : Prevalence of afternoon tea per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Afternoon tea frequency per week									
	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	571	45248	25.4	22.51	28.61	1376	99859	56.1	52.80	59.42
<b>Locality of school</b>										
Urban	571	45248	25.4	22.51	28.61	1376	99859	56.1	52.80	59.42
Rural										
<b>Sex</b>										
Boys	277	26092	29.1	25.94	32.47	518	47995	53.5	48.82	58.17
Girls	294	19156	21.7	18.51	25.29	858	51864	58.8	55.28	62.21
<b>Ethnicity</b>										
Malay	317	25676	24.8	20.84	29.15	859	62754	60.5	56.66	64.27
Chinese	183	14413	25.2	22.21	28.40	383	28552	49.9	47.39	52.38
Indian	54	3771	31.4	22.55	41.75	98	6182	51.4	43.34	59.40
Bumiputera Sabah	3	296	22.7	6.02	57.45	13	833	64.1	33.01	86.56
Bumiputera Sarawak	1	91	12.6	1.35	60.28	4	264	36.6	16.37	62.98
Others	13	1002	34.3	16.86	57.37	19	1274	43.6	26.00	63.03
<b>School level</b>										
Primary school	212	20173	30.8	27.84	33.89	366	34344	52.4	47.80	56.95
Secondary school	359	25075	22.3	19.31	25.65	1010	65515	58.3	54.44	62.09
<b>Class</b>										
Standard 4	86	8131	36.3	31.04	41.87	118	11115	49.6	43.37	55.84
Standard 5	76	6055	27.6	23.10	32.69	156	12402	56.6	48.25	64.62
Standard 6	50	5988	28.2	25.06	31.58	92	10827	51.0	45.43	56.54
Form 1	85	5915	25.5	17.47	35.68	214	13724	59.2	47.14	70.28
Form 2	72	5445	25.0	19.49	31.37	183	13049	59.8	53.96	65.41
Form 3	67	4428	19.8	16.45	23.57	197	12723	56.8	52.01	61.47
Form 4	73	4709	21.2	16.82	26.34	211	13048	58.7	52.33	64.83
Form 5	62	4578	20.1	15.34	25.98	205	12971	57.1	52.31	61.66
<b>School session</b>										
Morning session	368	28833	24.7	20.90	28.90	904	64979	55.6	51.18	59.97
Evening session	90	6560	27.2	19.82	36.07	194	12776	53.0	41.72	63.90
Morning and evening session	113	9855	26.7	23.14	30.64	277	22054	59.8	56.62	62.90
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	43	3585	27.4	20.02	36.24	102	8073	61.7	52.07	70.43
Normal (≥-2sd - ≤+1sd)	375	29150	27.2	24.16	30.57	836	59299	55.4	52.25	58.55
Overweight (>+1sd - ≤+2sd)	79	6272	21.2	16.20	27.14	228	16739	56.5	49.70	62.99
Obese (>+2sd)	74	6242	22.3	17.16	28.35	208	15636	55.8	48.20	63.05
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	39	2969	27.7	17.79	40.35	82	5823	54.3	44.59	63.65
Normal (≥-2sd)	532	42279	25.3	22.33	28.53	1293	93968	56.2	52.79	59.63

**Table 3.4.12 : Prevalence of afternoon tea per week among adolescents per week by socio-demographic characteristics and nutritional status**

Characteristics	Afternoon tea frequency per week				
	Count	Did not take afternoon tea			
		Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	462	32780	18.4	15.82	21.35
<b>Locality of school</b>					
Urban	462	32780	18.4	15.82	21.35
Rural					
<b>Sex</b>					
Boys	164	15580	17.4	14.09	21.24
Girls	298	17200	19.5	16.24	23.23
<b>Ethnicity</b>					
Malay	212	15252	14.7	12.35	17.43
Chinese	195	14272	24.9	22.68	27.34
Indian	37	2073	17.2	10.83	26.32
Bumiputera Sabah	3	172	13.2	3.60	38.29
Bumiputera Sarawak	5	367	50.8	25.13	76.06
Others	10	644	22.1	12.51	35.90
<b>School level</b>					
Primary school	115	11028	16.8	12.69	21.97
Secondary school	347	21752	19.4	16.23	22.94
<b>Class</b>					
Standard 4	33	3163	14.1	9.53	20.41
Standard 5	46	3449	15.7	9.53	24.90
Standard 6	36	4416	20.8	16.54	25.81
Form 1	54	3535	15.3	9.88	22.81
Form 2	50	3320	15.2	11.16	20.42
Form 3	82	5247	23.4	18.95	28.59
Form 4	80	4464	20.1	14.71	26.82
Form 5	81	5187	22.8	15.94	31.54
<b>School session</b>					
Morning session	321	23019	19.7	16.83	22.93
Evening session	71	4788	19.8	13.50	28.21
Morning and evening session	70	4973	13.5	11.16	16.21
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	19	1433	10.9	7.09	16.53
Normal (≥-2sd - ≤+1sd)	267	18546	17.3	14.92	20.05
Overweight (>+1sd - ≤+2sd)	95	6635	22.4	16.67	29.36
Obese (>+2sd)	81	6165	22.0	17.00	27.94
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	30	1936	18.0	11.98	26.27
Normal (≥-2sd)	432	30844	18.5	15.68	21.60

Table 3.4.13 : Source of food for afternoon tea among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food for afternoon tea									
	Prepared at home					School canteen				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1252	92831	64.7	60.66	68.60	294	22940	16.0	13.00	19.52
<b>Locality of school</b>										
Urban	1252	92831	64.7	60.66	68.60	294	22940	16.0	13.00	19.52
Rural										
<b>Sex</b>										
Boys	490	45380	62.0	56.54	67.10	137	13047	17.8	12.90	24.09
Girls	762	47451	67.6	62.72	72.17	157	9893	14.1	11.79	16.78
<b>Ethnicity</b>										
Malay	773	58110	66.2	61.26	70.84	193	15039	17.1	13.66	21.28
Chinese	317	24140	57.4	52.17	62.41	81	6439	15.3	9.75	23.21
Indian	125	8067	81.1	74.61	86.17	15	1104	11.1	5.97	19.68
Bumiputera Sabah	11	689	61.0	32.17	83.82	2	142	12.6	3.45	36.87
Bumiputera Sarawak	5	355	100.0	0.00	100.00					
Others	21	1470	68.9	52.19	81.75	3	216	10.1	3.38	26.66
<b>School level</b>										
Primary school	376	35410	65.9	62.05	69.64	105	10135	18.9	13.76	25.33
Secondary school	876	57421	64.0	57.92	69.68	189	12805	14.3	11.30	17.88
<b>Class</b>										
Standard 4	129	12122	63.9	56.44	70.83	41	4110	21.7	13.64	32.67
Standard 5	156	12558	68.8	61.42	75.38	44	3560	19.5	16.83	22.50
Standard 6	91	10730	65.1	60.72	69.17	20	2465	14.9	7.27	28.27
Form 1	174	11526	59.0	51.10	66.50	81	5165	26.5	18.80	35.84
Form 2	128	9350	51.5	36.93	65.81	52	3763	20.7	13.35	30.71
Form 3	176	11229	66.2	58.63	73.07	22	1550	9.1	5.10	15.85
Form 4	203	12427	70.5	60.61	78.79	18	1079	6.1	3.51	10.45
Form 5	195	12889	73.9	65.00	81.17	16	1249	7.2	3.05	15.91
<b>School session</b>										
Morning session	853	62458	67.6	62.51	72.36	137	11056	12.0	8.47	16.65
Evening session	135	8940	46.5	38.30	54.88	94	6365	33.1	25.97	41.10
Morning and evening session	264	21433	67.5	61.27	73.10	62	5469	17.2	11.29	25.35
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	101	7950	68.2	58.29	76.69	24	2026	17.4	10.38	27.66
Normal (≥-2sd - ≤+1sd)	773	56260	64.5	60.00	68.66	174	13405	15.4	11.83	19.69
Overweight (>+1sd - ≤+2sd)	186	14141	62.2	53.98	69.80	55	4214	18.5	14.03	24.10
Obese (>+2sd)	191	14435	66.8	60.31	72.69	40	3226	14.9	11.11	19.77
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	82	5980	68.0	62.25	73.27	18	1385	15.7	10.31	23.32
Normal (≥-2sd)	1170	86851	64.6	60.23	68.65	275	21488	16.0	13.03	19.42

Table 3.4.13 : Source of food for afternoon tea among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food for afternoon tea									
	Restaurant/ kiosk					Hostel				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	241	17615	12.3	9.61	15.57	67	4518	3.2	1.41	6.91
<b>Locality of school</b>										
Urban	241	17615	12.3	9.61	15.57	67	4518	3.2	1.41	6.91
Rural										
<b>Sex</b>										
Boys	96	9056	12.4	8.95	16.84	28	2447	3.3	1.37	7.92
Girls	145	8559	12.2	9.39	15.71	39	2071	3.0	0.79	10.43
<b>Ethnicity</b>										
Malay	107	8035	9.2	7.24	11.52	61	4106	4.7	1.77	11.77
Chinese	118	8415	20.0	14.65	26.69	4	308	0.7	0.19	2.71
Indian	9	590	5.9	3.78	9.17	1	47	0.5	0.06	3.47
Bumiputera Sabah	3	297	26.3	8.97	56.47					
Bumiputera Sarawak										
Others	4	277	13.0	5.09	29.37	1	57	2.7	0.36	17.49
<b>School level</b>										
Primary school	54	5090	9.5	6.67	13.31	6	482	0.9	0.30	2.62
Secondary school	187	12525	14.0	10.52	18.30	61	4036	4.5	1.94	10.10
<b>Class</b>										
Standard 4	18	1592	8.4	5.28	13.11	2	166	0.9	0.21	3.52
Standard 5	18	1308	7.2	3.41	14.45	3	210	1.1	0.27	4.71
Standard 6	18	2190	13.3	8.79	19.58	1	107	0.6	0.08	5.05
Form 1	28	1894	9.7	6.96	13.36	6	379	1.9	0.60	6.05
Form 2	28	2035	11.2	7.53	16.36	35	2357	13.0	4.45	32.36
Form 3	42	2793	16.5	10.31	25.28	14	922	5.4	1.44	18.49
Form 4	44	3078	17.5	10.02	28.67	4	284	1.6	0.59	4.32
Form 5	45	2724	15.6	10.54	22.52	2	93	0.5	0.06	4.54
<b>School session</b>										
Morning session	176	12759	13.8	10.55	17.88	43	2772	3.0	1.13	7.72
Evening session	30	2190	11.4	8.37	15.31	17	1242	6.5	2.08	18.34
Morning and evening session	35	2667	8.4	6.03	11.56	7	504	1.6	0.65	3.83
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	15	1215	10.4	5.74	18.18	1	100	0.9	0.10	6.86
Normal (≥-2sd - ≤+1sd)	160	11397	13.1	9.90	17.02	43	2887	3.3	1.48	7.22
Overweight (>+1sd - ≤+2sd)	41	2780	12.2	8.44	17.40	11	675	3.0	0.96	8.82
Obese (>+2sd)	25	2223	10.3	7.24	14.41	12	857	4.0	1.86	8.27
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	10	728	8.3	5.07	13.24	3	188	2.1	0.58	7.54
Normal (≥-2sd)	231	16887	12.6	9.75	16.01	64	4330	3.2	1.43	7.09

**Table 3.4.13 : Source of food for afternoon tea among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Source of food for afternoon tea				
	Count	Estimated Population	Prevalence (%)	Other	
				Lower	Upper
<b>WP Kuala Lumpur</b>	71	5500	3.84	2.61	5.61
<b>Locality of school</b>					
Urban	71	5500	3.84	2.61	5.61
Rural					
<b>Sex</b>					
Boys	35	3308	4.52	2.70	7.45
Girls	36	2192	3.12	2.09	4.64
<b>Ethnicity</b>					
Malay	33	2465	2.81	2.02	3.89
Chinese	35	2776	6.60	3.96	10.80
Indian	2	145	1.46	0.29	7.06
Bumiputera Sabah					
Bumiputera Sarawak					
Others	1	114	5.34	0.57	35.57
<b>School level</b>					
Primary school	28	2577	4.80	2.30	9.74
Secondary school	43	2923	3.26	2.41	4.39
<b>Class</b>					
Standard 4	11	966	5.10	2.03	12.20
Standard 5	8	611	3.35	1.74	6.35
Standard 6	9	1000	6.06	3.22	11.12
Form 1	8	563	2.88	1.13	7.14
Form 2	8	652	3.59	1.82	6.98
Form 3	7	462	2.72	1.37	5.35
Form 4	12	757	4.30	2.36	7.71
Form 5	8	489	2.80	1.01	7.53
<b>School session</b>					
Morning session	44	3308	3.58	2.45	5.22
Evening session	7	493	2.56	1.63	4.00
Morning and evening session	20	1699	5.35	2.96	9.48
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	4	366	3.14	1.19	8.01
Normal (≥-2sd - ≤+1sd)	45	3342	3.83	2.40	6.06
Overweight (>+1sd - ≤+2sd)	11	919	4.04	1.80	8.83
Obese (>+2sd)	11	873	4.04	2.36	6.81
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	8	511	5.81	2.93	11.22
Normal (≥-2sd)	63	4989	3.71	2.43	5.63

Table 3.4.14 : Prevalence of heavy meal after dinner per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Heavy meal after dinner frequency per week									
	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	168	13050	7.3	6.01	8.95	1577	116921	65.8	60.21	71.01
<b>Locality of school</b>										
Urban	168	13050	7.3	6.01	8.95	1577	116921	65.8	60.21	71.01
Rural										
<b>Sex</b>										
Boys	81	7783	8.7	6.85	10.97	667	62188	69.4	63.28	74.96
Girls	87	5267	6.0	4.47	7.96	910	54733	62.1	56.00	67.91
<b>Ethnicity</b>										
Malay	124	9515	9.2	7.23	11.64	978	73203	70.8	67.07	74.27
Chinese	32	2688	4.7	3.30	6.64	427	32332	56.5	46.97	65.55
Indian	10	735	6.1	3.11	11.58	118	7593	62.9	56.18	69.13
Bumiputera Sabah	1	54	4.1	0.44	29.48	16	1004	77.2	40.78	94.33
Bumiputera Sarawak						8	592	82.0	57.10	93.94
Others	1	58	2.0	0.30	12.13	30	2196	75.2	57.03	87.41
<b>School level</b>										
Primary school	53	5223	8.0	5.58	11.28	415	39496	60.3	48.91	70.72
Secondary school	115	7827	7.0	5.53	8.77	1162	77425	69.0	64.37	73.31
<b>Class</b>										
Standard 4	22	2138	9.5	6.58	13.63	147	14175	63.3	50.31	74.54
Standard 5	16	1212	5.6	3.94	7.78	175	14089	64.5	51.81	75.51
Standard 6	15	1873	8.8	4.30	17.25	93	11232	52.9	43.05	62.53
Form 1	24	1707	7.3	4.06	12.95	250	16247	70.0	61.38	77.34
Form 2	32	2150	9.9	6.83	14.22	208	15028	69.4	62.10	75.79
Form 3	19	1218	5.5	3.43	8.57	245	16300	73.0	65.01	79.69
Form 4	24	1590	7.2	3.91	12.75	239	15109	68.0	61.16	74.14
Form 5	16	1162	5.1	2.25	11.21	220	14741	64.8	56.57	72.30
<b>School session</b>										
Morning session	101	7773	6.7	5.27	8.41	1052	78026	67.0	60.90	72.49
Evening session	23	1682	7.0	4.30	11.10	235	15739	65.2	58.78	71.19
Morning and evening session	44	3595	9.7	6.74	13.85	289	23106	62.6	52.77	71.42
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	17	1508	11.5	6.23	20.34	108	8590	65.6	54.88	74.96
Normal (≥-2sd - ≤+1sd)	106	7789	7.3	5.94	8.95	956	69909	65.5	59.80	70.82
Overweight (>+1sd - ≤+2sd)	22	1727	5.8	4.16	8.11	266	19365	65.3	56.44	73.25
Obese (>+2sd)	23	2025	7.2	5.11	10.08	246	19012	67.7	62.46	72.48
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	9	698	6.5	3.76	11.04	105	7271	67.8	53.32	79.49
Normal (≥-2sd)	159	12352	7.4	6.02	9.07	1472	109649	65.7	60.11	70.92

**Table 3.4.14 : Prevalence of heavy meal after dinner per week among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Heavy meal after dinner frequency per week				
	Did not take heavy meal after dinner				
	Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	661	47677	26.8	21.43	33.04
<b>Locality of school</b>					
Urban	661	47677	26.8	21.43	33.04
Rural					
<b>Sex</b>					
Boys	210	19593	21.9	16.42	28.52
Girls	451	28084	31.9	25.98	38.43
<b>Ethnicity</b>					
Malay	282	20675	20.0	16.81	23.61
Chinese	302	22217	38.8	30.70	47.60
Indian	62	3747	31.0	25.14	37.60
Bumiputera Sabah	2	243	18.7	3.73	57.62
Bumiputera Sarawak	2	130	18.0	6.06	42.90
Others	11	665	22.8	11.79	39.46
<b>School level</b>					
Primary school	224	20749	31.7	21.35	44.23
Secondary school	437	26928	24.0	18.99	29.85
<b>Class</b>					
Standard 4	68	6096	27.2	17.12	40.34
Standard 5	86	6526	29.9	20.64	41.16
Standard 6	70	8126	38.3	25.48	52.93
Form 1	80	5270	22.7	14.85	33.07
Form 2	63	4484	20.7	16.34	25.87
Form 3	81	4820	21.6	15.54	29.15
Form 4	101	5521	24.8	19.09	31.66
Form 5	112	6832	30.1	20.79	41.29
<b>School session</b>					
Morning session	436	30743	26.4	20.61	33.08
Evening session	97	6703	27.8	22.09	34.30
Morning and evening session	128	10231	27.7	19.43	37.85
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	39	2992	22.9	14.28	34.52
Normal ( $\geq -2sd - \leq +1sd$ )	412	29008	27.2	21.58	33.63
Overweight ( $> +1sd - \leq +2sd$ )	114	8553	28.9	20.88	38.38
Obese ( $> +2sd$ )	95	7056	25.1	20.50	30.38
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	37	2758	25.7	14.28	41.83
Normal ( $\geq -2sd$ )	623	44851	26.9	21.50	33.04

Table 3.4.15 : Source of food for eating heavy meal after dinner among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Source of food for eating for heavy meal after dinner									
	Home					Restaurant/kiosk				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	987	71151	56.0	53.11	58.94	591	45636	35.9	33.18	38.81
<b>Locality of school</b>										
Urban	987	71151	56.0	53.11	58.94	591	45636	35.9	33.18	38.81
Rural										
<b>Sex</b>										
Boys	369	34294	50.7	46.20	55.16	292	27551	40.7	36.79	44.77
Girls	618	36858	62.2	59.05	65.18	299	18085	30.5	27.48	33.70
<b>Ethnicity</b>										
Malay	617	44615	55.3	51.81	58.67	365	28835	35.7	31.92	39.69
Chinese	279	20737	60.5	53.61	66.94	146	11327	33.0	27.44	39.14
Indian	67	4173	51.5	43.02	59.84	54	3609	44.5	37.80	51.42
Bumiputera Sabah	5	331	31.3	16.66	51.01	12	727	68.7	48.99	83.34
Bumiputera Sarawak	5	386	65.2	27.54	90.23	3	206	34.8	9.77	72.46
Others	14	908	41.8	21.64	65.19	11	933	43.0	23.42	64.99
<b>School level</b>										
Primary school	269	25437	57.9	52.97	62.73	162	15777	35.9	30.80	41.40
Secondary school	718	45715	55.0	51.49	58.56	429	29859	36.0	32.76	39.28
<b>Class</b>										
Standard 4	95	9086	56.3	47.51	64.69	56	5516	34.2	26.83	42.36
Standard 5	113	8949	59.6	52.96	66.00	68	5607	37.4	30.38	44.93
Standard 6	61	7401	58.0	50.59	65.03	38	4655	36.5	27.69	46.24
Form 1	171	11123	63.7	59.31	67.80	84	5487	31.4	27.34	35.77
Form 2	124	8593	51.6	43.38	59.65	68	5062	30.4	22.90	39.04
Form 3	141	9005	52.6	45.90	59.28	90	6228	36.4	28.59	45.00
Form 4	152	8815	53.7	41.78	65.19	96	6654	40.5	32.41	49.20
Form 5	130	8178	53.2	45.24	60.98	91	6428	41.8	36.31	47.52
<b>School session</b>										
Morning session	652	46969	55.9	50.87	60.88	392	30337	36.1	32.74	39.66
Evening session	152	9847	58.6	51.43	65.46	75	5266	31.3	25.75	37.54
Morning and evening session	183	14335	54.8	47.81	61.70	123	9983	38.2	31.25	45.66
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	65	4947	49.4	34.41	64.54	53	4501	45.0	30.19	60.69
Normal (≥-2sd - ≤+1sd)	621	44439	58.8	55.98	61.59	343	25701	34.0	32.01	36.08
Overweight (>+1sd - ≤+2sd)	166	11800	57.0	49.09	64.48	90	6716	32.4	25.95	39.63
Obese (>+2sd)	134	9921	48.1	42.36	53.90	105	8718	42.3	36.10	48.68
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	82	5590	72.5	59.83	82.34	26	1860	24.1	16.26	34.23
Normal (≥-2sd)	905	65561	55.0	52.27	57.66	565	43776	36.7	34.16	39.34



Table 3.4.15 : Source of food for eating heavy meal after dinner among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Source of food for eating heavy meal after dinner									
	Hostel					Others				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	53	3599	2.83	1.19	6.59	78	6569	5.17	3.96	6.73
<b>Locality of school</b>										
Urban	53	3599	2.83	1.19	6.59	78	6569	5.17	3.96	6.73
Rural										
<b>Sex</b>										
Boys	22	1989	2.94	1.17	7.17	40	3827	5.66	3.63	8.72
Girls	31	1610	2.71	0.75	9.30	38	2742	4.62	3.24	6.56
<b>Ethnicity</b>										
Malay	47	3125	3.87	1.43	10.08	49	4160	5.15	3.83	6.90
Chinese	3	261	0.76	0.22	2.64	23	1966	5.73	3.58	9.05
Indian	1	98	1.21	0.13	10.01	3	228	2.82	0.85	8.90
Bumiputera Sabah										
Bumiputera Sarawak										
Others	2	115	5.32	0.74	29.78	3	214	9.87	2.98	28.12
<b>School level</b>										
Primary school	3	222	0.51	0.12	2.17	25	2474	5.64	4.36	7.26
Secondary school	50	3377	4.07	1.72	9.33	53	4094	4.93	3.31	7.29
<b>Class</b>										
Standard 4	1	83	0.52	0.06	4.23	15	1457	9.02	7.01	11.54
Standard 5	2	138	0.92	0.24	3.48	4	309	2.06	0.78	5.30
Standard 6						6	709	5.55	2.90	10.38
Form 1	5	300	1.72	0.40	7.07	7	563	3.22	1.56	6.55
Form 2	29	1947	11.68	4.06	29.26	14	1066	6.39	3.88	10.37
Form 3	10	623	3.64	0.92	13.26	18	1253	7.33	4.31	12.17
Form 4	4	351	2.14	0.76	5.85	7	598	3.64	1.34	9.51
Form 5	2	156	1.01	0.22	4.49	7	613	3.99	1.99	7.82
<b>School session</b>										
Morning session	35	2317	2.76	1.07	6.95	52	4348	5.18	4.01	6.67
Evening session	15	1079	6.42	2.00	18.74	8	607	3.61	1.65	7.70
Morning and evening session	3	203	0.78	0.19	3.09	18	1614	6.18	4.18	9.03
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	2	191	1.91	0.43	8.09	4	371	3.70	1.27	10.28
Normal (≥-2sd - ≤+1sd)	30	1937	2.56	1.06	6.06	43	3481	4.61	3.65	5.80
Overweight (>+1sd - ≤+2sd)	10	637	3.08	0.94	9.64	18	1565	7.55	4.44	12.57
Obese (>+2sd)	11	834	4.04	1.70	9.30	13	1152	5.59	3.21	9.53
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	2	101	1.31	0.28	6.03	1	160	2.07	0.27	14.15
Normal (≥-2sd)	51	3498	2.93	1.25	6.72	77	6409	5.37	4.07	7.06

Table 3.4.16 : Prevalence of fast food consumption per week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Frequency of fast food consumption per week									
	Daily (7 days)					1 to 6 days				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	40	3422	1.9	1.08	3.42	1981	145821	82.1	76.98	86.36
<b>Locality of school</b>										
Urban	40	3422	1.9	1.08	3.42	1981	145821	82.1	76.98	86.36
Rural										
<b>Sex</b>										
Boys	22	2267	2.5	1.24	5.13	787	73742	82.5	77.86	86.32
Girls	18	1155	1.3	0.82	2.08	1194	72079	81.8	75.47	86.78
<b>Ethnicity</b>										
Malay	37	3201	3.1	2.05	4.64	1224	91355	88.2	86.53	89.74
Chinese						535	40180	70.3	62.44	77.17
Indian	3	221	1.8	0.61	5.47	164	10204	85.2	75.09	91.60
Bumiputera Sabah						17	1127	93.1	58.66	99.24
Bumiputera Sarawak						8	549	76.0	36.76	94.51
Others						33	2405	82.4	65.10	92.12
<b>School level</b>										
Primary school	19	2031	3.1	1.43	6.60	548	52461	80.2	67.94	88.52
Secondary school	21	1391	1.2	0.64	2.39	1433	93360	83.3	78.70	87.08
<b>Class</b>										
Standard 4	7	692	3.1	1.47	6.35	182	17538	78.3	62.61	88.56
Standard 5	5	382	1.7	0.56	5.32	223	17618	80.4	75.25	84.74
Standard 6	7	957	4.5	1.44	13.36	143	17305	81.9	62.17	92.58
Form 1	3	250	1.1	0.24	4.66	297	19251	82.9	74.85	88.75
Form 2	2	145	0.7	0.09	5.00	260	18661	85.7	80.56	89.72
Form 3	5	276	1.2	0.45	3.38	291	18745	84.0	80.48	87.02
Form 4	4	214	1.0	0.35	2.65	305	18741	84.3	79.60	88.15
Form 5	7	505	2.2	0.89	5.50	280	17963	79.6	71.16	86.12
<b>School session</b>										
Morning session	26	2169	1.9	0.95	3.60	1321	96435	82.8	78.04	86.66
Evening session	1	80	0.3	0.05	2.38	277	18598	77.1	70.83	82.35
Morning and evening session	13	1173	3.2	1.68	5.96	382	30738	83.4	71.90	90.84
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	5	510	3.9	1.23	11.69	136	10763	82.2	71.35	89.57
Normal (≥-2sd - ≤+1sd)	22	1864	1.7	0.92	3.30	1214	87668	82.2	76.93	86.46
Overweight (>+1sd - ≤+2sd)	3	275	0.9	0.27	3.11	320	23146	78.1	71.31	83.61
Obese (>+2sd)	9	728	2.6	1.17	5.69	310	24176	86.3	80.58	90.59
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	6	471	4.4	1.71	10.97	129	9103	85.5	77.49	91.05
Normal (≥-2sd)	34	2951	1.8	0.94	3.31	1851	136650	81.9	76.53	86.30

**Table 3.4.16 : Prevalence of fast food consumption per week among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Frequency of fast food consumption per week				
	Did not ate fast food				
	Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	384	28272	15.9	11.30	21.97
<b>Locality of school</b>					
Urban	384	28272	15.9	11.30	21.97
Rural					
<b>Sex</b>					
Boys	147	13389	15.0	10.51	20.89
Girls	237	14883	16.9	11.69	23.78
<b>Ethnicity</b>					
Malay	125	8990	8.7	7.02	10.69
Chinese	225	16952	29.7	22.83	37.56
Indian	22	1558	13.0	7.61	21.34
Bumiputera Sabah	1	83	6.9	0.76	41.34
Bumiputera Sarawak	2	173	24.0	5.49	63.24
Others	9	515	17.6	7.88	34.90
<b>School level</b>					
Primary school	125	10950	16.7	7.94	31.90
Secondary school	259	17322	15.5	11.24	20.88
<b>Class</b>					
Standard 4	48	4179	18.6	8.22	36.98
Standard 5	50	3905	17.8	12.82	24.25
Standard 6	27	2866	13.6	3.42	41.06
Form 1	54	3722	16.0	9.89	24.92
Form 2	42	2959	13.6	9.49	19.10
Form 3	49	3289	14.7	11.73	18.38
Form 4	55	3266	14.7	10.70	19.85
Form 5	59	4085	18.1	10.93	28.50
<b>School session</b>					
Morning session	242	17896	15.4	11.24	20.65
Evening session	77	5446	22.6	17.24	28.97
Morning and evening session	65	4930	13.4	5.93	27.45
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	23	1817	13.9	6.76	26.37
Normal ( $\geq$ -2sd - $\leq$ +1sd)	238	17132	16.1	11.47	22.04
Overweight (>+1sd - $\leq$ +2sd)	79	6225	21.0	15.27	28.15
Obese (>+2sd)	44	3098	11.1	6.44	18.36
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	15	1067	10.0	5.78	16.82
Normal ( $\geq$ -2sd)	369	27205	16.3	11.56	22.52

Table 3.4.17 : Practice of bring food to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Bring food to school practices									
	Everyday					Occasionally				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
Lower				Upper	Lower				Upper	
<b>WP Kuala Lumpur</b>	265	19271	10.9	6.71	17.10	1183	85839	48.4	44.86	51.87
<b>Locality of school</b>										
Urban	265	19271	10.9	6.71	17.10	1183	85839	48.4	44.86	51.87
Rural										
<b>Sex</b>										
Boys	89	7940	8.9	5.70	13.61	392	37058	41.5	38.30	44.73
Girls	176	11331	12.9	7.61	20.90	791	48781	55.3	51.08	59.50
<b>Ethnicity</b>										
Malay	93	6895	6.7	5.55	8.00	713	52684	51.0	45.99	55.95
Chinese	128	9361	16.4	6.92	33.95	352	25726	44.9	41.73	48.21
Indian	33	2153	18.0	9.79	30.65	93	5728	47.8	41.10	54.58
Bumiputera Sabah	1	53	4.1	0.49	27.19	7	453	34.8	15.60	60.72
Bumiputera Sarawak	2	129	17.8	4.76	48.48	3	251	34.8	12.37	66.85
Others	8	680	23.3	9.23	47.59	15	996	34.1	22.04	48.64
<b>School level</b>										
Primary school	114	10107	15.4	6.59	32.07	357	34168	52.2	46.87	57.44
Secondary school	151	9164	8.2	6.52	10.22	826	51671	46.1	42.31	49.98
<b>Class</b>										
Standard 4	38	3394	15.1	6.65	30.92	121	11439	51.0	42.35	59.69
Standard 5	50	3785	17.3	8.20	32.98	141	11262	51.6	46.54	56.57
Standard 6	26	2928	13.8	4.66	34.38	95	11467	54.0	46.54	61.30
Form 1	29	1929	8.3	6.02	11.43	175	11030	47.7	42.25	53.12
Form 2	19	1313	6.0	3.08	11.49	135	9011	41.4	35.23	47.85
Form 3	30	1819	8.2	5.49	12.02	146	9128	41.0	32.34	50.30
Form 4	36	1973	8.9	4.55	16.61	191	11296	50.8	45.29	56.36
Form 5	37	2129	9.4	6.22	13.97	179	11207	49.5	41.23	57.79
<b>School session</b>										
Morning session	176	12443	10.7	6.91	16.15	773	55789	47.9	43.86	51.96
Evening session	31	2129	8.8	6.50	11.88	166	10826	44.9	39.44	50.43
Morning and evening session	58	4700	12.8	5.21	28.01	243	19175	52.0	46.13	57.87
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	12	927	7.1	3.46	13.93	80	6168	47.1	38.54	55.87
Normal (≥-2sd - ≤+1sd)	167	11787	11.0	6.72	17.63	723	51519	48.3	43.59	52.98
Overweight (>+1sd - ≤+2sd)	50	3792	12.8	7.55	20.96	194	14008	47.4	42.62	52.18
Obese (>+2sd)	36	2766	9.9	5.79	16.35	184	14032	50.1	44.26	55.96
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	12	810	7.6	4.04	13.90	77	5775	54.3	42.42	65.66
Normal (≥-2sd)	253	18461	11.1	6.71	17.72	1105	79996	48.0	44.59	51.35

**Table 3.4.17 : Practice of bring food to school among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Bring food to school practices				
	Count	Estimated Population	Never Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	956	72393	40.8	34.83	47.02
<b>Locality of school</b>					
Urban	956	72393	40.8	34.83	47.02
Rural					
<b>Sex</b>					
Boys	474	44343	49.6	44.55	54.72
Girls	482	28049	31.8	25.57	38.80
<b>Ethnicity</b>					
Malay	577	43761	42.3	37.08	47.79
Chinese	281	22149	38.7	25.79	53.42
Indian	63	4102	34.2	26.23	43.25
Bumiputera Sabah	11	794	61.1	37.43	80.45
Bumiputera Sarawak	5	342	47.4	14.46	82.76
Others	19	1244	42.6	27.33	59.42
<b>School level</b>					
Primary school	221	21202	32.4	23.09	43.30
Secondary school	735	51190	45.7	40.58	50.91
<b>Class</b>					
Standard 4	78	7575	33.8	23.36	46.11
Standard 5	86	6791	31.1	23.13	40.36
Standard 6	57	6836	32.2	21.18	45.63
Form 1	149	10186	44.0	38.71	49.45
Form 2	150	11441	52.6	44.64	60.36
Form 3	168	11304	50.8	40.53	61.01
Form 4	137	8952	40.3	31.33	49.94
Form 5	131	9308	41.1	31.94	50.93
<b>School session</b>					
Morning session	639	48245	41.4	35.51	47.59
Evening session	158	11169	46.3	41.14	51.54
Morning and evening session	159	12978	35.2	26.00	45.68
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	72	5996	45.8	35.83	56.12
Normal (≥-2sd - ≤+1sd)	584	43426	40.7	34.19	47.53
Overweight (>+1sd - ≤+2sd)	157	11766	39.8	33.16	46.83
Obese (>+2sd)	143	11204	40.0	32.53	48.00
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	61	4056	38.1	27.45	50.06
Normal (≥-2sd)	895	68337	41.0	34.98	47.24

Table 3.4.18 : Type of food usually bring to school among adolescents by socio-demographic characteristics nutritional status (Cont..)

Characteristics	Type of food									
	Nasi lemak/fried rice/mixed rice					Noodle/Vermicelli/ Kueh Teow				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	420	30597	30.2	24.00	37.18	178	12140	12.0	9.90	14.42
<b>Locality of school</b>										
Urban	420	30597	30.2	24.00	37.18	178	12140	12.0	9.90	14.42
Rural										
<b>Sex</b>										
Boys	148	13857	32.4	25.90	39.76	45	4122	9.7	7.26	12.73
Girls	272	16740	28.5	21.53	36.75	133	8018	13.7	11.19	16.60
<b>Ethnicity</b>										
Malay	320	23521	40.8	36.98	44.64	121	8529	14.8	13.04	16.70
Chinese	67	4883	14.4	9.11	22.03	38	2401	7.1	5.13	9.70
Indian	21	1434	19.8	13.12	28.65	13	691	9.5	4.35	19.61
Bumiputera Sabah	6	373	73.6	41.27	91.69	3	225	44.4	19.65	72.25
Bumiputera Sarawak	2	137	36.1	5.04	85.79					
Others	4	249	15.5	4.42	42.04	3	294	18.3	5.84	44.76
<b>School level</b>										
Primary school	127	12193	28.5	18.28	41.63	50	4679	11.0	7.67	15.40
Secondary school	293	18404	31.4	24.66	38.98	128	7461	12.7	10.43	15.43
<b>Class</b>										
Standard 4	41	3907	27.7	14.74	45.97	14	1353	9.6	5.43	16.43
Standard 5	55	4510	31.4	20.34	45.18	26	2090	14.6	9.69	21.33
Standard 6	31	3776	26.4	15.81	40.74	10	1235	8.6	6.36	11.65
Form 1	70	4258	34.3	25.06	44.85	29	1711	13.8	9.61	19.36
Form 2	49	3210	31.9	20.97	45.24	24	1593	15.8	9.39	25.42
Form 3	52	3318	32.1	21.78	44.55	18	1088	10.5	5.61	18.90
Form 4	66	3937	30.3	21.99	40.17	34	1828	14.1	9.24	20.87
Form 5	56	3680	28.7	19.35	40.25	23	1240	9.7	6.49	14.16
<b>School session</b>										
Morning session	267	19872	30.1	24.31	36.62	110	7437	11.3	9.13	13.83
Evening session	62	3857	31.5	19.41	46.67	22	1247	10.2	6.43	15.75
Morning and evening session	91	6868	29.8	18.46	44.27	46	3455	15.0	9.38	23.07
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	25	1936	28.9	15.29	47.88	9	660	9.9	5.14	18.10
Normal (≥-2sd - ≤+1sd)	256	18516	30.3	23.88	37.57	104	6828	11.2	8.74	14.17
Overweight (>+1sd - ≤+2sd)	66	4994	28.9	19.29	40.93	34	2358	13.7	10.10	18.21
Obese (>+2sd)	72	5106	31.6	22.34	42.56	31	2293	14.2	8.97	21.71
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	34	2547	40.5	28.13	54.25	6	385	6.1	2.99	12.11
Normal (≥-2sd)	386	28050	29.5	23.41	36.48	172	11755	12.4	10.15	15.00

Table 3.4.18 : Type of food usually bring to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of food									
	Bread/bun/sandwich					Nugget/sausage/burger				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	597	43130	42.5	33.53	52.09	144	10497	10.4	7.70	13.79
<b>Locality of school</b>										
Urban	597	43130	42.5	33.53	52.09	144	10497	10.4	7.70	13.79
Rural										
<b>Sex</b>										
Boys	187	17900	41.9	31.82	52.73	51	4840	11.3	7.83	16.13
Girls	410	25231	43.0	33.72	52.82	93	5657	9.6	6.73	13.63
<b>Ethnicity</b>										
Malay	217	15862	27.5	24.24	30.99	120	8559	14.8	12.15	17.98
Chinese	306	22440	66.2	56.11	75.00	14	1151	3.4	2.08	5.50
Indian	60	3689	50.8	38.13	63.42	7	518	7.1	2.70	17.54
Bumiputera Sabah	1	43	8.4	0.84	49.97					
Bumiputera Sarawak	1	91	24.0	2.23	81.28	1	76	20.1	4.99	54.70
Others	12	1005	62.5	41.92	79.43	2	193	12.0	3.47	34.08
<b>School level</b>										
Primary school	194	18213	42.6	26.13	60.96	51	4815	11.3	6.48	18.89
Secondary school	403	24917	42.5	33.49	52.01	93	5682	9.7	7.20	12.92
<b>Class</b>										
Standard 4	60	5454	38.7	19.83	61.71	18	1688	12.0	6.22	21.82
Standard 5	73	5527	38.5	23.72	55.84	21	1724	12.0	6.57	20.98
Standard 6	61	7232	50.6	32.30	68.78	12	1403	9.8	4.59	19.77
Form 1	61	3898	31.4	18.39	48.13	23	1584	12.7	7.16	21.69
Form 2	46	3207	31.9	21.46	44.44	18	1236	12.3	8.70	17.06
Form 3	78	4810	46.5	34.37	59.16	16	876	8.5	5.31	13.29
Form 4	104	6004	46.2	36.34	56.43	19	909	7.0	3.91	12.22
Form 5	114	6998	54.5	42.95	65.62	17	1077	8.4	4.48	15.17
<b>School session</b>										
Morning session	409	29016	44.0	36.46	51.76	94	6664	10.1	7.16	14.06
Evening session	74	5159	42.1	26.00	60.05	18	1152	9.4	6.62	13.17
Morning and evening session	113	8906	38.6	21.31	59.37	32	2681	11.6	7.57	17.45
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	46	3548	53.0	37.51	67.99	8	617	9.2	4.53	17.88
Normal (≥-2sd - ≤+1sd)	383	26790	43.8	35.06	53.00	85	5980	9.8	7.14	13.26
Overweight (>+1sd - ≤+2sd)	94	6775	39.2	27.17	52.77	18	1304	7.6	4.92	11.42
Obese (>+2sd)	74	6017	37.2	27.82	47.70	31	2483	15.4	8.47	26.24
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	28	2022	32.2	22.71	43.36	9	653	10.4	5.55	18.60
Normal (≥-2sd)	569	41108	43.3	34.24	52.76	134	9776	10.3	7.46	14.04

Table 3.4.18 : Type of food usually bring to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of food									
	Biscuit					Fruits				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	162	11504	11.3	8.45	15.07	47	3413	3.4	2.44	4.62
<b>Locality of school</b>										
Urban	162	11504	11.3	8.45	15.07	47	3413	3.4	2.44	4.62
Rural										
<b>Sex</b>										
Boys	44	3931	9.2	6.40	13.06	12	1189	2.8	1.32	5.76
Girls	118	7573	12.9	9.48	17.34	35	2224	3.8	2.69	5.31
<b>Ethnicity</b>										
Malay	64	4717	8.2	5.57	11.84	26	1996	3.5	2.10	5.63
Chinese	80	5578	16.5	12.93	20.71	15	1009	3.0	2.04	4.33
Indian	13	863	11.9	6.79	19.98	4	259	3.6	1.63	7.64
Bumiputera Sabah										
Bumiputera Sarawak	2	160	42.2	14.86	75.30					
Others	3	186	11.6	3.32	33.24	2	148	9.2	2.51	28.67
<b>School level</b>										
Primary school	58	5240	12.3	8.00	18.36	23	2060	4.8	3.40	6.80
Secondary school	104	6263	10.7	7.19	15.57	24	1353	2.3	1.53	3.46
<b>Class</b>										
Standard 4	17	1610	11.4	7.11	17.85	11	985	7.0	4.15	11.54
Standard 5	25	1870	13.0	7.12	22.67	9	694	4.8	3.04	7.62
Standard 6	16	1760	12.3	6.89	21.07	3	381	2.7	0.87	7.88
Form 1	12	770	6.2	3.55	10.61	10	605	4.9	2.57	9.05
Form 2	25	1584	15.7	4.79	40.94	3	159	1.6	0.54	4.56
Form 3	14	869	8.4	4.57	14.99	1	50	0.5	0.07	3.48
Form 4	26	1602	12.3	8.18	18.19	5	231	1.8	0.40	7.51
Form 5	27	1439	11.2	7.83	15.80	5	308	2.4	0.81	6.84
<b>School session</b>										
Morning session	113	7736	11.7	8.43	16.07	27	1880	2.8	1.99	4.06
Evening session	18	1296	10.6	5.52	19.30	11	645	5.3	2.66	10.17
Morning and evening session	31	2471	10.7	7.23	15.59	9	888	3.8	1.97	7.40
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	10	681	10.2	3.66	25.28	3	235	3.5	0.97	11.91
Normal (≥-2sd - ≤+1sd)	115	8072	13.2	10.32	16.75	25	1896	3.1	1.85	5.15
Overweight (>+1sd - ≤+2sd)	22	1709	9.9	5.77	16.45	12	831	4.8	2.67	8.50
Obese (>+2sd)	15	1042	6.4	3.50	11.57	7	451	2.8	1.23	6.24
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	8	476	7.6	3.29	16.44	4	256	4.1	1.65	9.73
Normal (≥-2sd)	154	11028	11.6	8.78	15.20	43	3157	3.3	2.33	4.72



**Table 3.4.18 : Type of food usually bring to school among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Type of food				
	Count	Estimated Population	Others Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	154	11052	10.9	8.89	13.30
<b>Locality of school</b>					
Urban	154	11052	10.9	8.89	13.30
Rural					
<b>Sex</b>					
Boys	46	4205	9.8	6.39	14.88
Girls	108	6847	11.7	9.51	14.25
<b>Ethnicity</b>					
Malay	75	5545	9.6	7.48	12.26
Chinese	58	4337	12.8	8.88	18.10
Indian	16	889	12.3	9.03	16.42
Bumiputera Sabah					
Bumiputera Sarawak	2	129	33.9	12.58	64.58
Others	3	152	9.4	1.74	38.06
<b>School level</b>					
Primary school	56	5211	12.2	8.97	16.38
Secondary school	98	5841	10.0	7.67	12.84
<b>Class</b>					
Standard 4	20	1707	12.1	5.91	23.22
Standard 5	19	1476	10.3	6.54	15.83
Standard 6	17	2028	14.2	8.24	23.35
Form 1	26	1732	13.9	8.42	22.21
Form 2	17	1019	10.1	5.81	17.03
Form 3	22	1293	12.5	7.88	19.30
Form 4	18	998	7.7	4.79	12.09
Form 5	15	800	6.2	3.02	12.43
<b>School session</b>					
Morning session	90	6353	9.6	7.32	12.56
Evening session	19	1210	9.9	5.52	17.04
Morning and evening session	45	3489	15.1	10.07	22.11
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	9	663	9.9	4.42	20.74
Normal ( $\geq$ -2sd - $\leq$ +1sd)	91	6223	10.2	7.98	12.89
Overweight (>+1sd - $\leq$ +2sd)	29	2228	12.9	8.38	19.35
Obese (>+2sd)	25	1938	12.0	7.68	18.25
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	10	868	13.8	7.36	24.41
Normal ( $\geq$ -2sd)	144	10184	10.7	8.61	13.27

Table 3.4.19 : Practice of bring drinks to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Bring drinks to school practices									
	Everyday					Occasionally				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1244	88369	49.7	44.44	54.92	713	54123	30.4	26.20	35.00
<b>Locality of school</b>										
Urban	1244	88369	49.7	44.44	54.92	713	54123	30.4	26.20	35.00
Rural										
<b>Sex</b>										
Boys	413	39018	43.5	38.67	48.49	292	27370	30.5	25.72	35.79
Girls	831	49351	55.9	49.70	61.99	421	26752	30.3	25.40	35.74
<b>Ethnicity</b>										
Malay	640	46544	44.9	39.72	50.22	509	38881	37.5	34.53	40.60
Chinese	420	29972	52.4	42.75	61.81	158	12291	21.5	16.56	27.38
Indian	143	8988	74.4	65.82	81.49	23	1312	10.9	7.03	16.43
Bumiputera Sabah	10	679	52.2	31.02	72.61	8	579	44.5	24.74	66.21
Bumiputera Sarawak	6	462	63.9	34.51	85.65	3	207	28.6	7.76	65.61
Others	25	1724	59.0	41.62	74.45	12	853	29.2	16.26	46.69
<b>School level</b>										
Primary school	320	30406	46.4	36.86	56.19	241	23336	35.6	29.06	42.73
Secondary school	924	57963	51.6	45.77	57.37	472	30786	27.4	23.07	32.21
<b>Class</b>										
Standard 4	101	9918	44.3	32.86	56.30	91	8556	38.2	29.05	48.24
Standard 5	140	10816	49.4	34.23	64.63	85	6971	31.8	21.47	44.34
Standard 6	79	9673	45.6	31.67	60.18	65	7809	36.8	29.69	44.50
Form 1	173	11162	48.1	40.02	56.21	117	7515	32.4	24.42	41.47
Form 2	159	11136	51.2	42.16	60.11	88	6119	28.1	23.23	33.58
Form 3	187	11591	51.8	40.36	62.96	86	5499	24.6	17.34	33.55
Form 4	196	10825	48.7	37.19	60.38	95	6031	27.1	20.51	34.98
Form 5	209	13248	58.3	45.68	69.86	86	5621	24.7	17.38	33.91
<b>School session</b>										
Morning session	821	57287	49.1	42.24	55.90	457	34406	29.5	24.63	34.81
Evening session	162	10821	44.9	37.03	52.94	115	7598	31.5	23.00	41.45
Morning and evening session	261	20260	54.9	47.49	62.02	140	12069	32.7	27.36	38.48
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	80	6363	48.6	38.72	58.60	49	3773	28.8	20.67	38.63
Normal (≥-2sd - ≤+1sd)	749	51765	48.4	42.61	54.24	438	32766	30.6	25.17	36.71
Overweight (>+1sd - ≤+2sd)	206	14292	48.2	40.73	55.77	126	9945	33.5	26.26	41.72
Obese (>+2sd)	207	15835	56.4	49.88	62.65	100	7638	27.2	22.87	31.98
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	70	4529	42.2	32.13	53.00	49	3709	34.6	22.91	48.43
Normal (≥-2sd)	1173	83772	50.1	44.91	55.36	664	50414	30.2	25.98	34.72

**Table 3.4.19 : Practice of bring drinks to school among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Bring drinks to school practices				
	Count	Estimated Population	Never Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	452	35396	19.9	15.36	25.37
<b>Locality of school</b>					
Urban	452	35396	19.9	15.36	25.37
Rural					
<b>Sex</b>					
Boys	254	23279	26.0	20.99	31.64
Girls	198	12117	13.7	9.62	19.23
<b>Ethnicity</b>					
Malay	238	18208	17.6	13.40	22.69
Chinese	183	14973	26.2	17.65	36.93
Indian	24	1775	14.7	8.49	24.25
Bumiputera Sabah	1	43	3.3	0.35	24.71
Bumiputera Sarawak	1	54	7.5	1.01	38.86
Others	5	343	11.8	4.92	25.56
<b>School level</b>					
Primary school	132	11803	18.0	9.39	31.75
Secondary school	320	23593	21.0	17.05	25.59
<b>Class</b>					
Standard 4	45	3935	17.6	7.21	36.85
Standard 5	53	4119	18.8	13.00	26.42
Standard 6	34	3749	17.7	7.09	37.61
Form 1	64	4546	19.6	14.47	25.94
Form 2	57	4509	20.7	16.03	26.35
Form 3	73	5307	23.7	15.06	35.22
Form 4	73	5364	24.1	17.48	32.35
Form 5	53	3866	17.0	12.14	23.31
<b>School session</b>					
Morning session	314	25088	21.5	16.21	27.90
Evening session	78	5705	23.6	19.30	28.64
Morning and evening session	60	4603	12.5	8.23	18.43
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	35	2955	22.6	16.03	30.81
Normal (≥-2sd - ≤+1sd)	290	22414	21.0	16.18	26.70
Overweight (>+1sd - ≤+2sd)	70	5407	18.2	11.46	27.78
Obese (>+2sd)	57	4619	16.4	12.09	21.98
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	32	2490	23.2	11.85	40.47
Normal (≥-2sd)	420	32905	19.7	15.52	24.67

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Table 3.4.20 : Type of drinks usually bring to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of drinks									
	Plain water					Flavoured water/ packed drink/ syrup drink/ tea/ coffee/ Milo				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	1749	125450	88.1	85.28	90.45	205	15919	11.2	8.27	14.95
<b>Locality of school</b>										
Urban	1749	125450	88.1	85.28	90.45	205	15919	11.2	8.27	14.95
Rural										
<b>Sex</b>										
Boys	590	55535	83.7	80.12	86.80	84	7834	11.8	8.26	16.62
Girls	1159	69915	91.9	89.44	93.86	121	8084	10.6	7.64	14.60
<b>Ethnicity</b>										
Malay	1015	74088	86.8	84.03	89.22	124	10159	11.9	9.25	15.20
Chinese	516	37370	88.4	80.96	93.20	67	4926	11.7	5.24	23.96
Indian	158	9786	95.0	87.59	98.09	10	548	5.3	2.27	11.95
Bumiputera Sabah	15	1060	84.2	62.93	94.40	3	202	16.1	4.23	45.28
Bumiputera Sarawak	9	669	100.0	0.00	100.00					
Others	36	2477	96.2	79.54	99.38	1	84	3.2	0.52	17.62
<b>School level</b>										
Primary school	471	45092	84.0	80.08	87.29	88	8511	15.9	11.09	22.16
Secondary school	1278	80358	90.6	87.87	92.75	117	7408	8.4	6.11	11.31
<b>Class</b>										
Standard 4	149	14481	78.4	71.66	83.88	35	3172	17.2	10.34	27.15
Standard 5	199	15728	88.8	82.30	93.07	27	2189	12.4	8.47	17.67
Standard 6	123	14882	85.1	77.61	90.43	26	3150	18.0	11.99	26.18
Form 1	261	16560	88.7	83.70	92.25	29	1899	10.2	5.86	17.07
Form 2	223	15476	89.7	85.82	92.59	26	1746	10.1	7.75	13.11
Form 3	253	15719	92.0	86.65	95.29	16	1062	6.2	2.46	14.83
Form 4	265	15117	89.9	83.69	93.93	27	1600	9.5	6.67	13.39
Form 5	276	17486	92.7	85.43	96.46	19	1101	5.8	3.19	10.43
<b>School session</b>										
Morning session	1146	80819	88.2	84.34	91.28	131	10389	11.3	8.33	15.26
Evening session	247	16219	88.1	82.37	92.08	29	1782	9.7	5.84	15.62
Morning and evening session	355	28362	87.7	80.60	92.48	45	3747	11.6	6.13	20.84
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	108	8161	80.5	71.55	87.17	26	2230	22.0	16.04	29.40
Normal (≥-2sd - ≤+1sd)	1058	74348	88.0	84.55	90.76	122	9102	10.8	7.49	15.26
Overweight (>+1sd - ≤+2sd)	303	21636	89.3	83.33	93.26	26	2236	9.2	5.17	15.91
Obese (>+2sd)	279	21260	90.6	86.43	93.54	31	2351	10.0	6.30	15.55
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	104	6988	84.8	77.17	90.24	14	922	11.2	6.21	19.36
Normal (≥-2sd)	1645	118462	88.3	85.46	90.66	191	14997	11.2	8.12	15.21

Table 3.4.20 : Type of drinks usually bring to school among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of drinks									
	Carbonated drink					Milk/ cultured drink				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	21	1720	1.2	0.79	1.85	61	4362	3.1	2.20	4.26
<b>Locality of school</b>										
Urban	21	1720	1.2	0.79	1.85	61	4362	3.1	2.20	4.26
Rural										
<b>Sex</b>										
Boys	14	1321	2.0	1.21	3.26	22	2102	3.2	1.95	5.10
Girls	7	399	0.5	0.23	1.18	39	2260	3.0	1.96	4.48
<b>Ethnicity</b>										
Malay	11	877	1.0	0.59	1.78	30	2338	2.7	1.67	4.45
Chinese	8	714	1.7	0.93	3.05	27	1795	4.2	2.99	6.00
Indian						3	183	1.8	0.62	5.00
Bumiputera Sabah	1	46	3.7	0.50	22.42					
Bumiputera Sarawak						1	46	6.9	0.83	39.75
Others	1	83	3.2	0.39	22.14					
<b>School level</b>										
Primary school	7	655	1.2	0.64	2.31	22	1999	3.7	2.06	6.64
Secondary school	14	1065	1.2	0.68	2.12	39	2363	2.7	1.90	3.72
<b>Class</b>										
Standard 4	3	242	1.3	0.35	4.80	10	908	4.9	2.28	10.29
Standard 5	2	141	0.8	0.11	5.69	7	531	3.0	1.70	5.21
Standard 6	2	272	1.6	0.50	4.73	5	561	3.2	1.46	6.88
Form 1	5	316	1.7	0.41	6.74	11	664	3.6	1.55	7.92
Form 2	5	433	2.5	0.82	7.39	12	735	4.3	2.25	7.94
Form 3	2	125	0.7	0.09	5.42	5	319	1.9	0.77	4.46
Form 4	1	99	0.6	0.07	4.52	6	282	1.7	0.35	7.60
Form 5	1	91	0.5	0.06	3.65	5	364	1.9	0.66	5.52
<b>School session</b>										
Morning session	7	507	0.6	0.21	1.48	31	2178	2.4	1.70	3.32
Evening session	9	729	4.0	2.70	5.77	17	1031	5.6	2.98	10.27
Morning and evening session	5	484	1.5	0.63	3.51	13	1153	3.6	1.88	6.65
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	1	99	1.0	0.12	7.68	4	278	2.7	0.79	9.05
Normal (≥-2sd - ≤+1sd)	14	1095	1.3	0.69	2.44	42	2887	3.4	2.40	4.84
Overweight (>+1sd - ≤+2sd)	6	526	2.2	0.92	5.04	9	674	2.8	1.32	5.77
Obese (>+2sd)						6	524	2.2	1.01	4.85
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	1	80	1.0	0.12	7.60	3	221	2.7	0.84	8.27
Normal (≥-2sd)	20	1640	1.2	0.79	1.90	58	4141	3.1	2.23	4.27

**Table 3.4.20 : Type of drinks usually bring to school among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Type of drinks				
	Count	Estimated Population	Others Percentage (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	46	3807	2.7	1.72	4.13
<b>Locality of school</b>					
Urban	46	3807	2.7	1.72	4.13
Rural					
<b>Sex</b>					
Boys	25	2353	3.5	2.16	5.78
Girls	21	1454	1.9	0.88	4.11
<b>Ethnicity</b>					
Malay	18	1535	1.8	1.32	2.44
Chinese	25	2055	4.9	2.74	8.50
Indian	2	149	1.4	0.38	5.30
Bumiputera Sabah	1	68	5.4	0.58	35.70
Bumiputera Sarawak					
Others					
<b>School level</b>					
Primary school	21	1987	3.7	1.84	7.32
Secondary school	25	1820	2.1	1.24	3.37
<b>Class</b>					
Standard 4	8	683	3.7	1.01	12.68
Standard 5	5	358	2.0	0.61	6.43
Standard 6	8	946	5.4	2.14	13.02
Form 1	3	261	1.4	0.46	4.18
Form 2	6	384	2.2	0.98	4.96
Form 3	5	333	1.9	0.89	4.22
Form 4	7	486	2.9	1.33	6.16
Form 5	4	356	1.9	0.60	5.79
<b>School session</b>					
Morning session	31	2659	2.9	1.65	5.06
Evening session	4	302	1.6	0.61	4.37
Morning and evening session	11	845	2.6	1.36	4.98
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	2	172	1.7	0.36	7.58
Normal (≥-2sd - ≤+1sd)	30	2371	2.8	1.73	4.52
Overweight (>+1sd - ≤+2sd)	7	692	2.9	1.25	6.38
Obese (>+2sd)	7	572	2.4	0.69	8.20
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	5	460	5.6	1.99	14.70
Normal (≥-2sd)	41	3347	2.5	1.70	3.65

Table 3.4.21 : Spending of pocket money among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Spending of pocket money									
	Buy food/drinks					Buy stationery				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1511	110818	63.7	57.80	69.17	82	6417	3.7	2.77	4.90
<b>Locality of school</b>										
Urban	1511	110818	63.7	57.80	69.17	82	6417	3.7	2.77	4.90
Rural										
<b>Sex</b>										
Boys	571	53936	61.5	55.25	67.34	41	3759	4.3	2.68	6.77
Girls	940	56882	65.9	58.15	72.92	41	2659	3.1	2.09	4.52
<b>Ethnicity</b>										
Malay	982	72524	70.9	67.09	74.43	46	3815	3.7	2.37	5.83
Chinese	383	28852	52.0	44.03	59.83	28	1995	3.6	2.94	4.38
Indian	103	6591	57.1	47.59	66.12	4	193	1.7	0.75	3.68
Bumiputera Sabah	16	1051	80.8	55.01	93.54	1	91	7.0	1.10	33.86
Bumiputera Sarawak	6	450	69.6	29.84	92.48					
Others	21	1351	49.2	29.55	69.17	3	323	11.8	3.14	35.51
<b>School level</b>										
Primary school	408	39898	62.3	49.16	73.80	24	2280	3.6	2.51	5.01
Secondary school	1103	70920	64.5	59.04	69.59	58	4138	3.8	2.51	5.60
<b>Class</b>										
Standard 4	134	13024	59.6	45.20	72.50	12	1181	5.4	3.62	8.00
Standard 5	162	13264	62.3	45.06	76.88	7	498	2.3	1.01	5.31
Standard 6	112	13610	65.1	55.39	73.63	5	601	2.9	1.64	4.97
Form 1	241	15957	69.6	63.55	74.99	18	1283	5.6	3.23	9.51
Form 2	208	14183	66.0	57.22	73.75	6	515	2.4	0.92	6.09
Form 3	233	14713	67.1	57.35	75.57	10	729	3.3	1.34	8.03
Form 4	213	12711	58.9	49.83	67.34	11	832	3.9	1.53	9.36
Form 5	208	13356	60.7	53.62	67.34	13	779	3.5	1.65	7.44
<b>School session</b>										
Morning session	968	70803	62.2	56.43	67.69	53	4222	3.7	2.47	5.53
Evening session	234	15568	65.2	59.52	70.43	13	862	3.6	2.16	5.97
Morning and evening session	308	24398	67.2	55.33	77.20	16	1333	3.7	2.45	5.46
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	113	8824	68.7	56.97	78.49	5	477	3.7	1.66	8.08
Normal ( $\geq$ -2sd - $\leq$ +1sd)	937	67556	64.7	58.02	70.79	47	3653	3.5	2.58	4.72
Overweight ( $>$ +1sd - $\leq$ +2sd)	238	17242	59.9	50.93	68.27	20	1512	5.3	3.32	8.22
Obese ( $>$ +2sd)	223	17196	61.6	54.84	67.98	10	775	2.8	1.46	5.22
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	97	6789	64.3	55.72	72.12	7	572	5.4	2.85	10.04
Normal ( $\geq$ -2sd)	1414	104030	63.6	57.56	69.30	75	5846	3.6	2.60	4.90

Table 3.4.21 : Spending of pocket money among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Spending of pocket money									
	Saving					Others				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	642	47610	27.4	22.85	32.37	123	9191	5.3	3.93	7.05
<b>Locality of school</b>										
Urban	642	47610	27.4	22.85	32.37	123	9191	5.3	3.93	7.05
Rural										
<b>Sex</b>										
Boys	272	24837	28.3	23.96	33.10	54	5212	5.9	3.92	8.91
Girls	370	22773	26.4	20.92	32.70	69	3979	4.6	3.08	6.84
<b>Ethnicity</b>										
Malay	296	22529	22.0	19.14	25.20	44	3429	3.4	2.19	5.09
Chinese	258	19467	35.1	27.24	43.80	71	5192	9.4	6.53	13.23
Indian	69	4324	37.5	28.59	47.27	6	435	3.8	1.73	8.01
Bumiputera Sabah	2	159	12.2	2.42	43.74					
Bumiputera Sarawak	3	197	30.4	7.52	70.16					
Others	14	935	34.1	21.34	49.59	2	135	4.9	1.06	19.95
<b>School level</b>										
Primary school	219	19449	30.4	20.45	42.49	25	2444	3.8	2.63	5.50
Secondary school	423	28161	25.6	22.23	29.30	98	6747	6.1	4.34	8.60
<b>Class</b>										
Standard 4	73	6567	30.0	18.70	44.51	12	1084	5.0	2.75	8.77
Standard 5	97	7247	34.0	21.28	49.60	4	286	1.3	0.49	3.63
Standard 6	49	5634	26.9	19.84	35.44	9	1074	5.1	2.55	10.05
Form 1	76	4803	20.9	17.67	24.64	15	892	3.9	1.97	7.54
Form 2	74	5782	26.9	21.83	32.64	12	1020	4.7	2.17	10.06
Form 3	84	5618	25.6	18.62	34.15	13	868	4.0	2.38	6.51
Form 4	94	5659	26.2	20.69	32.58	36	2392	11.1	7.13	16.82
Form 5	95	6299	28.6	21.76	36.63	22	1574	7.2	4.57	11.01
<b>School session</b>										
Morning session	442	32137	28.2	23.49	33.54	90	6627	5.8	4.08	8.24
Evening session	85	6042	25.3	21.63	29.34	20	1414	5.9	3.46	9.95
Morning and evening session	115	9430	26.0	18.89	34.58	13	1150	3.2	1.40	7.00
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	37	3130	24.4	15.94	35.41	5	408	3.2	1.16	8.40
Normal (≥-2sd - ≤+1sd)	377	27437	26.3	21.41	31.77	82	5822	5.6	3.73	8.25
Overweight (>+1sd - ≤+2sd)	119	8738	30.4	23.67	38.00	16	1287	4.5	2.86	6.93
Obese (>+2sd)	108	8260	29.6	24.16	35.69	20	1674	6.0	3.74	9.50
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	36	2649	25.1	19.67	31.47	9	542	5.1	2.38	10.70
Normal (≥-2sd)	606	44960	27.5	22.75	32.82	114	8649	5.3	3.94	7.07



Table 3.4.22 : Prevalence of eating out in a week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Frequency of eating out in a week									
	7 times or more					4 to 6 times				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	130	10252	5.8	4.51	7.39	338	25844	14.6	12.81	16.55
<b>Locality of school</b>										
Urban	130	10252	5.8	4.51	7.39	338	25844	14.6	12.81	16.55
Rural										
<b>Sex</b>										
Boys	54	5148	5.8	4.07	8.12	158	14882	16.7	13.82	19.98
Girls	76	5104	5.8	4.40	7.63	180	10962	12.5	10.68	14.50
<b>Ethnicity</b>										
Malay	62	5016	4.9	3.43	6.85	184	14402	14.0	11.22	17.24
Chinese	59	4392	7.7	5.43	10.82	121	9304	16.3	14.76	18.01
Indian	5	413	3.4	1.07	10.42	27	1684	13.9	10.09	18.96
Bumiputera Sabah	1	160	12.3	1.42	57.69	3	191	14.7	3.94	42.03
Bumiputera Sarawak	1	107	14.8	1.61	64.61					
Others	2	164	5.6	1.07	24.67	3	263	9.0	3.01	23.95
<b>School level</b>										
Primary school	51	4849	7.4	5.53	9.93	109	10235	15.7	11.87	20.46
Secondary school	79	5402	4.8	3.43	6.74	229	15609	13.9	12.42	15.62
<b>Class</b>										
Standard 4	22	2031	9.1	6.30	13.07	37	3373	15.2	11.45	19.83
Standard 5	17	1353	6.2	4.41	8.70	38	2999	13.8	9.72	19.17
Standard 6	12	1465	6.9	3.44	13.36	34	3863	18.2	11.17	28.24
Form 1	17	1053	4.6	2.90	7.13	34	2218	9.6	6.56	13.91
Form 2	11	923	4.2	1.89	9.24	40	3156	14.5	8.64	23.31
Form 3	15	1024	4.6	2.77	7.53	46	3153	14.1	9.65	20.23
Form 4	19	1400	6.3	3.79	10.31	49	2953	13.3	9.84	17.72
Form 5	17	1002	4.4	2.21	8.66	60	4128	18.2	13.42	24.31
<b>School session</b>										
Morning session	93	7356	6.3	4.78	8.31	225	17118	14.7	13.11	16.45
Evening session	22	1629	6.8	4.38	10.39	40	2940	12.3	9.33	15.94
Morning and evening session	15	1267	3.4	1.93	6.08	73	5786	15.7	9.97	23.97
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	9	719	5.5	2.12	13.61	24	2053	15.7	9.87	24.17
Normal (≥-2sd - ≤+1sd)	77	6042	5.7	4.17	7.66	214	16352	15.3	13.74	17.11
Overweight (>+1sd - ≤+2sd)	25	1940	6.6	4.26	9.98	48	3638	12.3	9.00	16.62
Obese (>+2sd)	19	1551	5.5	3.84	7.93	51	3756	13.4	9.07	19.41
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	6	498	4.6	2.15	9.75	25	2060	19.2	13.46	26.63
Normal (≥-2sd)	124	9754	5.9	4.57	7.49	313	23784	14.3	12.32	16.52

Table 3.4.22 : Prevalence of eating out in a week among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Frequency of eating out in a week									
	1 to 3 times					Never				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	1724	126020	71.1	68.33	73.76	208	15078	8.5	6.94	10.40
<b>Locality of school</b>										
Urban	1724	126020	71.1	68.33	73.76	208	15078	8.5	6.94	10.40
Rural										
<b>Sex</b>										
Boys	663	61989	69.5	65.09	73.50	79	7227	8.1	6.37	10.24
Girls	1061	64031	72.8	69.86	75.56	129	7851	8.9	7.02	11.29
<b>Ethnicity</b>										
Malay	1010	74496	72.2	68.13	75.95	125	9254	9.0	6.74	11.85
Chinese	517	38889	68.2	63.79	72.34	61	4423	7.8	6.30	9.52
Indian	144	9063	75.1	67.09	81.62	14	916	7.6	4.66	12.11
Bumiputera Sabah	14	867	66.6	33.91	88.60	1	83	6.4	0.70	39.78
Bumiputera Sarawak	9	616	85.2	35.39	98.39					
Others	30	2090	71.6	56.29	83.13	7	402	13.8	5.02	32.58
<b>School level</b>										
Primary school	475	44908	68.8	64.45	72.93	54	5236	8.0	5.77	11.06
Secondary school	1249	81112	72.4	69.00	75.64	154	9842	8.8	6.77	11.34
<b>Class</b>										
Standard 4	153	14648	65.9	57.96	73.02	23	2178	9.8	8.03	11.90
Standard 5	200	15633	71.8	64.13	78.41	21	1782	8.2	4.46	14.55
Standard 6	122	14628	68.9	61.29	75.60	10	1276	6.0	3.48	10.19
Form 1	263	17236	74.8	67.41	81.01	37	2531	11.0	6.92	17.02
Form 2	225	15939	73.2	65.77	79.58	28	1747	8.0	4.33	14.39
Form 3	248	15848	71.0	64.04	77.15	36	2285	10.2	6.98	14.78
Form 4	267	16068	72.3	67.59	76.59	29	1799	8.1	5.12	12.57
Form 5	246	16021	70.8	63.64	77.05	24	1480	6.5	4.25	9.94
<b>School session</b>										
Morning session	1135	81820	70.3	66.73	73.62	134	10110	8.7	6.70	11.19
Evening session	248	16631	69.3	64.72	73.59	43	2788	11.6	7.93	16.72
Morning and evening session	340	27519	74.9	67.94	80.74	31	2180	5.9	3.90	8.93
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	118	9275	71.1	61.11	79.40	12	996	7.6	4.69	12.21
Normal (≥-2sd - ≤+1sd)	1058	75266	70.6	67.38	73.69	123	8895	8.3	6.70	10.36
Overweight (>+1sd - ≤+2sd)	286	20980	71.0	65.95	75.53	42	3000	10.2	7.33	13.89
Obese (>+2sd)	262	20500	73.2	67.66	78.15	31	2187	7.8	4.59	13.00
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	109	7465	69.6	61.55	76.57	11	706	6.6	3.04	13.65
Normal (≥-2sd)	1615	118556	71.2	68.23	74.03	197	14372	8.6	7.01	10.59

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Table 3.4.23 : Prevalence of consuming snack food in a week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

	7 times or more					4 to 6 times				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	191	15362	8.7	6.98	10.76	493	36299	20.5	18.52	22.68
<b>Locality of school</b>										
Urban	191	15362	8.7	6.98	10.76	493	36299	20.5	18.52	22.68
Rural										
<b>Sex</b>										
Boys	92	8932	10.0	8.20	12.25	207	19175	21.6	18.69	24.75
Girls	99	6431	7.3	5.51	9.64	286	17124	19.5	16.82	22.40
<b>Ethnicity</b>										
Malay	122	10123	9.8	7.44	12.91	293	22232	21.6	18.58	24.99
Chinese	49	3825	6.7	4.94	9.01	142	10318	18.1	15.77	20.59
Indian	15	1051	8.8	5.21	14.40	42	2758	23.0	17.98	28.99
Bumiputera Sabah	1	68	5.2	0.56	34.72	4	241	18.6	5.69	46.25
Bumiputera Sarawak						2	160	22.2	5.78	57.00
Others	4	297	10.2	4.65	20.76	10	590	20.2	12.34	31.29
<b>School level</b>										
Primary school	63	6316	9.7	6.31	14.58	137	12880	19.7	15.77	24.43
Secondary school	128	9046	8.1	6.61	9.89	356	23419	21.0	18.98	23.11
<b>Class</b>										
Standard 4	21	2256	10.1	4.49	21.25	39	3700	16.6	11.68	23.07
Standard 5	27	2177	10.0	7.81	12.64	64	5124	23.5	18.76	28.93
Standard 6	15	1883	8.9	4.76	16.08	34	4056	19.2	13.32	26.89
Form 1	22	1618	7.0	4.20	11.40	61	3855	16.6	12.52	21.76
Form 2	30	2332	10.8	7.40	15.61	62	4437	20.6	15.85	26.43
Form 3	21	1468	6.6	4.81	8.99	79	5247	23.6	18.82	29.15
Form 4	21	1346	6.1	4.37	8.42	80	5013	22.7	18.79	27.07
Form 5	34	2282	10.1	6.77	14.75	74	4867	21.5	17.80	25.72
<b>School session</b>										
Morning session	133	10580	9.1	7.07	11.72	327	23763	20.5	18.44	22.75
Evening session	26	1951	8.1	5.75	11.30	69	4429	18.4	14.41	23.19
Morning and evening session	32	2831	7.7	5.16	11.23	97	8107	22.0	18.15	26.29
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	15	1281	9.8	6.47	14.69	32	2609	20.0	14.59	26.90
Normal (≥-2sd - ≤+1sd)	130	10105	9.5	7.81	11.53	313	22500	21.2	18.39	24.23
Overweight (>+1sd - ≤+2sd)	21	1744	5.9	3.50	9.79	84	6260	21.2	17.38	25.57
Obese (>+2sd)	25	2233	8.0	5.48	11.47	64	4930	17.6	13.69	22.37
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	14	1229	11.5	6.32	19.87	23	1714	16.0	12.60	20.06
Normal (≥-2sd)	177	14133	8.5	6.86	10.50	470	34585	20.8	18.76	23.02

Table 3.4.23 : Prevalence of consuming snack food in a week among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Frequency of consuming snack foods per week									
	1-3 times					Never				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
Lower				Upper	Lower				Upper	
<b>WP Kuala Lumpur</b>	1592	115972	65.6	62.48	68.51	122	9275	5.2	3.64	7.50
<b>Locality of school</b>										
Urban	1592	115972	65.6	62.48	68.51	122	9275	5.2	3.64	7.50
Rural										
<b>Sex</b>										
Boys	596	55889	62.9	59.05	66.51	56	4914	5.5	3.83	7.91
Girls	996	60083	68.3	63.87	72.38	66	4361	5.0	3.03	8.01
<b>Ethnicity</b>										
Malay	921	67211	65.3	60.71	69.71	42	3286	3.2	2.08	4.88
Chinese	496	37503	65.6	62.10	69.02	73	5488	9.6	7.14	12.80
Indian	126	7769	64.9	57.16	71.85	6	402	3.4	1.38	7.95
Bumiputera Sabah	14	992	76.2	48.60	91.59					
Bumiputera Sarawak	8	562	77.8	43.00	94.22					
Others	27	1934	66.3	51.69	78.27	1	99	3.4	0.51	19.26
<b>School level</b>										
Primary school	436	41470	63.6	57.02	69.65	54	4571	7.0	3.95	12.12
Secondary school	1156	74501	66.7	63.95	69.37	68	4704	4.2	2.83	6.24
<b>Class</b>										
Standard 4	149	13912	62.4	53.84	70.31	27	2414	10.8	6.55	17.40
Standard 5	165	13029	59.7	53.25	65.76	21	1508	6.9	3.10	14.66
Standard 6	122	14529	68.8	61.01	75.66	6	649	3.1	1.21	7.58
Form 1	253	16455	71.0	64.23	76.95	17	1247	5.4	2.75	10.24
Form 2	200	14092	65.5	59.47	71.15	9	640	3.0	1.82	4.84
Form 3	232	14718	66.2	60.93	71.06	12	806	3.6	1.81	7.11
Form 4	246	14670	66.3	61.71	70.65	16	1089	4.9	3.00	7.99
Form 5	225	14567	64.3	59.22	69.15	14	924	4.1	2.25	7.30
<b>School session</b>										
Morning session	1044	75544	65.2	61.41	68.82	78	5965	5.1	3.31	7.93
Evening session	236	16028	66.6	62.12	70.76	23	1666	6.9	5.06	9.40
Morning and evening session	311	24349	65.9	60.93	70.60	21	1644	4.5	2.29	8.49
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	111	8799	67.6	59.93	74.44	5	326	2.5	0.82	7.39
Normal (≥-2sd - ≤+1sd)	952	68187	64.1	60.73	67.41	75	5524	5.2	3.67	7.31
Overweight (>+1sd - ≤+2sd)	268	19306	65.4	59.31	70.93	28	2232	7.6	4.19	13.25
Obese (>+2sd)	260	19635	70.1	65.99	74.00	14	1193	4.3	2.39	7.49
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	105	7240	67.5	58.99	74.97	9	545	5.1	2.70	9.34
Normal (≥-2sd)	1487	108732	65.4	62.37	68.37	113	8730	5.3	3.60	7.61

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Table 3.4.24 : Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of snack foods									
	Bread/ bun/ sandwich					French fries				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	861	62636	35.3	30.69	40.12	404	30391	17.1	14.70	19.82
<b>Locality of school</b>										
Urban	861	62636	35.3	30.69	40.12	404	30391	17.1	14.70	19.82
Rural										
<b>Sex</b>										
Boys	351	33286	37.2	31.43	43.26	160	15137	16.9	13.67	20.70
Girls	510	29350	33.3	29.30	37.66	244	15254	17.3	14.38	20.73
<b>Ethnicity</b>										
Malay	527	38520	37.2	30.77	44.15	220	16756	16.2	13.25	19.63
Chinese	233	17367	30.4	24.25	37.38	144	10921	19.1	13.90	25.74
Indian	78	5029	41.7	34.11	49.60	28	1905	15.8	11.08	21.97
Bumiputera Sabah	5	331	25.5	11.18	48.09	5	290	22.3	8.95	45.48
Bumiputera Sarawak	2	159	22.0	7.17	50.70					
Others	16	1230	42.1	21.69	65.65	7	520	17.8	8.94	32.35
<b>School level</b>										
Primary school	181	17565	26.9	21.43	33.14	109	10870	16.6	12.46	21.86
Secondary school	680	45071	40.1	35.96	44.47	295	19521	17.4	14.58	20.60
<b>Class</b>										
Standard 4	49	4704	21.0	16.11	26.88	38	3713	16.6	12.24	22.04
Standard 5	81	6551	30.2	23.64	37.68	39	3149	14.5	12.30	17.04
Standard 6	51	6309	29.7	22.35	38.32	32	4008	18.9	11.15	30.15
Form 1	120	7884	33.9	27.43	41.13	71	4680	20.1	16.44	24.45
Form 2	122	8871	40.9	32.13	50.22	62	4502	20.7	12.50	32.40
Form 3	134	8875	39.6	33.42	46.18	60	3788	16.9	13.04	21.66
Form 4	143	8636	38.9	31.08	47.27	58	3781	17.0	10.64	26.10
Form 5	161	10806	47.5	41.35	53.78	44	2770	12.2	8.93	16.42
<b>School session</b>										
Morning session	605	44035	37.8	32.04	43.91	238	17600	15.1	12.82	17.72
Evening session	104	6678	27.7	20.21	36.64	78	5507	22.8	16.04	31.41
Morning and evening session	151	11873	32.1	26.01	38.97	88	7284	19.7	15.72	24.46
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	57	4517	34.7	25.13	45.68	33	2703	20.8	15.61	27.07
Normal (≥-2sd - ≤+1sd)	542	38701	36.2	31.97	40.67	257	18675	17.5	15.20	20.00
Overweight (>+1sd - ≤+2sd)	121	8730	29.5	23.58	36.25	60	4467	15.1	11.63	19.38
Obese (>+2sd)	141	10688	38.0	29.45	47.46	53	4501	16.0	10.70	23.31
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	53	3704	34.5	25.54	44.77	29	2157	20.1	13.53	28.81
Normal (≥-2sd)	808	58932	35.3	30.77	40.14	375	28234	16.9	14.34	19.85

Table 3.4.24 : Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of snack foods									
	Bread/ bun/ sandwich					French fries				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	861	62636	35.3	30.69	40.12	404	30391	17.1	14.70	19.82
<b>Locality of school</b>										
Urban	861	62636	35.3	30.69	40.12	404	30391	17.1	14.70	19.82
Rural										
<b>Sex</b>										
Boys	351	33286	37.2	31.43	43.26	160	15137	16.9	13.67	20.70
Girls	510	29350	33.3	29.30	37.66	244	15254	17.3	14.38	20.73
<b>Ethnicity</b>										
Malay	527	38520	37.2	30.77	44.15	220	16756	16.2	13.25	19.63
Chinese	233	17367	30.4	24.25	37.38	144	10921	19.1	13.90	25.74
Indian	78	5029	41.7	34.11	49.60	28	1905	15.8	11.08	21.97
Bumiputera Sabah	5	331	25.5	11.18	48.09	5	290	22.3	8.95	45.48
Bumiputera Sarawak	2	159	22.0	7.17	50.70					
Others	16	1230	42.1	21.69	65.65	7	520	17.8	8.94	32.35
<b>School level</b>										
Primary school	181	17565	26.9	21.43	33.14	109	10870	16.6	12.46	21.86
Secondary school	680	45071	40.1	35.96	44.47	295	19521	17.4	14.58	20.60
<b>Class</b>										
Standard 4	49	4704	21.0	16.11	26.88	38	3713	16.6	12.24	22.04
Standard 5	81	6551	30.2	23.64	37.68	39	3149	14.5	12.30	17.04
Standard 6	51	6309	29.7	22.35	38.32	32	4008	18.9	11.15	30.15
Form 1	120	7884	33.9	27.43	41.13	71	4680	20.1	16.44	24.45
Form 2	122	8871	40.9	32.13	50.22	62	4502	20.7	12.50	32.40
Form 3	134	8875	39.6	33.42	46.18	60	3788	16.9	13.04	21.66
Form 4	143	8636	38.9	31.08	47.27	58	3781	17.0	10.64	26.10
Form 5	161	10806	47.5	41.35	53.78	44	2770	12.2	8.93	16.42
<b>School session</b>										
Morning session	605	44035	37.8	32.04	43.91	238	17600	15.1	12.82	17.72
Evening session	104	6678	27.7	20.21	36.64	78	5507	22.8	16.04	31.41
Morning and evening session	151	11873	32.1	26.01	38.97	88	7284	19.7	15.72	24.46
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	57	4517	34.7	25.13	45.68	33	2703	20.8	15.61	27.07
Normal (≥-2sd - ≤+1sd)	542	38701	36.2	31.97	40.67	257	18675	17.5	15.20	20.00
Overweight (>+1sd - ≤+2sd)	121	8730	29.5	23.58	36.25	60	4467	15.1	11.63	19.38
Obese (>+2sd)	141	10688	38.0	29.45	47.46	53	4501	16.0	10.70	23.31
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	53	3704	34.5	25.54	44.77	29	2157	20.1	13.53	28.81
Normal (≥-2sd)	808	58932	35.3	30.77	40.14	375	28234	16.9	14.34	19.85

Table 3.4.24 : Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of snack foods									
	Biscuit					Fruits				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	479	33869	19.1	16.30	22.18	491	36281	20.4	16.73	24.70
<b>Locality of school</b>										
Urban	479	33869	19.1	16.30	22.18	491	36281	20.4	16.73	24.70
Rural										
<b>Sex</b>										
Boys	165	15156	16.9	14.52	19.62	175	16287	18.2	14.64	22.35
Girls	314	18713	21.3	17.53	25.54	316	19994	22.7	18.49	27.58
<b>Ethnicity</b>										
Malay	238	16960	16.4	13.36	19.94	226	16895	16.3	13.67	19.38
Chinese	192	13809	24.2	20.78	27.95	209	15629	27.4	20.47	35.56
Indian	36	2322	19.2	15.31	23.88	41	2668	22.1	15.94	29.78
Bumiputera Sabah	4	233	17.9	6.10	42.22	3	277	21.3	5.09	57.81
Bumiputera Sarawak	2	137	19.0	3.68	59.08	3	169	23.4	6.24	58.37
Others	7	408	14.0	5.33	31.92	9	642	22.0	11.70	37.51
<b>School level</b>										
Primary school	125	11282	17.3	11.58	24.95	178	16351	25.0	17.82	33.94
Secondary school	354	22587	20.1	17.93	22.49	313	19930	17.7	15.00	20.88
<b>Class</b>										
Standard 4	35	3183	14.2	10.21	19.42	63	5925	26.4	20.58	33.27
Standard 5	55	4245	19.6	13.59	27.33	73	5547	25.6	17.65	35.51
Standard 6	35	3854	18.2	8.98	33.26	42	4879	23.0	13.48	36.37
Form 1	68	4560	19.6	16.59	23.09	77	5012	21.6	16.20	28.15
Form 2	68	4641	21.4	15.61	28.56	52	3690	17.0	12.79	22.24
Form 3	64	4116	18.4	14.17	23.49	57	3681	16.4	13.43	19.96
Form 4	78	4444	20.0	14.48	26.96	65	3585	16.1	10.30	24.37
Form 5	76	4827	21.2	16.58	26.76	62	3961	17.4	12.32	24.06
<b>School session</b>										
Morning session	322	22553	19.4	16.00	23.22	319	23286	20.0	16.27	24.30
Evening session	72	4907	20.3	17.64	23.34	87	5908	24.5	19.94	29.69
Morning and evening session	85	6409	17.4	13.07	22.68	85	7087	19.2	13.28	26.90
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	30	2217	17.0	12.20	23.26	32	2654	20.4	12.43	31.59
Normal ( $\geq$ -2sd - $\leq$ +1sd)	302	20997	19.6	16.95	22.65	313	22752	21.3	17.39	25.79
Overweight (>+1sd - $\leq$ +2sd)	81	5786	19.6	15.21	24.80	82	5917	20.0	15.37	25.62
Obese (>+2sd)	66	4869	17.3	12.17	24.09	64	4959	17.7	11.84	25.49
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	41	2821	26.3	19.04	35.11	22	1391	13.0	7.46	21.59
Normal ( $\geq$ -2sd)	438	31048	18.6	16.04	21.47	469	34890	20.9	17.08	25.33

Table 3.4.24 : Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of snack foods									
	Nuts					Fish cracker				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	66	5231	2.9	2.24	3.87	363	26863	15.1	12.30	18.46
<b>Locality of school</b>										
Urban	66	5231	2.9	2.24	3.87	363	26863	15.1	12.30	18.46
Rural										
<b>Sex</b>										
Boys	33	3115	3.5	2.31	5.19	141	13446	15.0	11.89	18.76
Girls	33	2116	2.4	1.58	3.63	222	13417	15.2	12.20	18.88
<b>Ethnicity</b>										
Malay	40	3293	3.2	2.30	4.39	272	20350	19.7	17.53	21.98
Chinese	17	1385	2.4	1.31	4.44	47	3664	6.4	3.75	10.76
Indian	7	441	3.7	1.50	8.62	30	1798	14.9	9.85	21.89
Bumiputera Sabah						6	480	36.9	17.54	61.70
Bumiputera Sarawak						4	327	45.2	20.82	72.16
Others	2	112	3.8	0.90	14.92	4	244	8.3	2.56	24.04
<b>School level</b>										
Primary school	19	1829	2.8	1.94	4.02	103	10451	16.0	10.26	24.08
Secondary school	47	3403	3.0	2.08	4.39	260	16412	14.6	12.13	17.52
<b>Class</b>										
Standard 4	8	830	3.7	1.87	7.19	36	3365	15.0	9.85	22.23
Standard 5	8	609	2.8	1.55	5.04	32	2757	12.7	5.65	26.15
Standard 6	3	390	1.8	0.68	4.86	35	4328	20.4	12.40	31.65
Form 1	5	362	1.6	0.74	3.25	46	2904	12.5	8.01	19.00
Form 2	9	797	3.7	1.98	6.70	45	3060	14.1	9.84	19.79
Form 3	6	372	1.7	0.66	4.10	66	4014	17.9	13.65	23.17
Form 4	15	913	4.1	2.12	7.81	62	3840	17.3	11.19	25.73
Form 5	12	960	4.2	2.07	8.41	41	2594	11.4	8.97	14.41
<b>School session</b>										
Morning session	40	3017	2.6	1.90	3.52	233	17391	14.9	11.31	19.44
Evening session	8	577	2.4	1.03	5.44	52	3332	13.8	8.70	21.24
Morning and evening session	18	1637	4.4	2.79	6.96	78	6140	16.6	12.40	21.93
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	6	558	4.3	2.16	8.32	30	2262	17.4	12.02	24.45
Normal (≥-2sd - ≤+1sd)	28	2251	2.1	1.56	2.84	229	16787	15.7	12.26	19.90
Overweight (>+1sd - ≤+2sd)	16	1236	4.2	2.18	7.88	54	3789	12.8	8.79	18.31
Obese (>+2sd)	16	1186	4.2	2.28	7.68	50	4025	14.3	10.24	19.69
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	1	44	0.4	0.05	3.21	20	1315	12.3	7.08	20.40
Normal (≥-2sd)	65	5187	3.1	2.34	4.12	343	25548	15.3	12.53	18.57



**Table 3.4.24 : Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Type of snack foods				
	Count	Estimated Population	Ice cream Percentage (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	335	24020	13.5	11.39	15.98
<b>Locality of school</b>					
Urban	335	24020	13.5	11.39	15.98
Rural					
<b>Sex</b>					
Boys	109	10328	11.5	8.34	15.72
Girls	226	13692	15.6	14.10	17.13
<b>Ethnicity</b>					
Malay	178	13142	12.7	9.99	16.01
Chinese	122	8936	15.7	12.46	19.48
Indian	24	1216	10.1	5.60	17.47
Bumiputera Sabah	1	77	5.9	0.65	38.01
Bumiputera Sarawak	2	100	13.8	2.79	47.02
Others	8	549	18.8	10.49	31.40
<b>School level</b>					
Primary school	118	10986	16.8	14.11	19.92
Secondary school	217	13034	11.6	9.38	14.28
<b>Class</b>					
Standard 4	44	4036	18.0	13.66	23.36
Standard 5	46	3572	16.5	13.79	19.53
Standard 6	28	3379	15.9	9.74	24.92
Form 1	51	3014	13.0	9.14	18.11
Form 2	36	2542	11.7	8.78	15.46
Form 3	35	2043	9.1	6.72	12.27
Form 4	47	2773	12.5	8.95	17.14
Form 5	48	2662	11.7	7.92	16.98
<b>School session</b>					
Morning session	205	14746	12.7	9.99	15.90
Evening session	56	3624	15.0	12.67	17.72
Morning and evening session	74	5651	15.3	11.96	19.37
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	24	1822	14.0	10.03	19.19
Normal ( $\geq$ -2sd - $\leq$ +1sd)	198	13811	12.9	10.77	15.43
Overweight ( $>$ +1sd - $\leq$ +2sd)	62	4519	15.3	11.46	20.08
Obese ( $>$ +2sd)	51	3868	13.8	10.89	17.27
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	22	1567	14.6	8.92	23.02
Normal ( $\geq$ -2sd)	313	22453	13.5	11.26	16.00

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Table 3.4.25 : Prevalence of snack food and/or drinks usually bought out of school area in a week among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	frequency of bought snack food and/or drink out of school area in a week									
	5 times or more					1 to 4 times				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	204	17503	9.9	7.30	13.19	1300	94515	53.2	46.14	60.21
<b>Locality of school</b>										
Urban	204	17503	9.9	7.30	13.19	1300	94515	53.2	46.14	60.21
Rural										
<b>Sex</b>										
Boys	118	11614	13.0	9.21	18.01	505	47231	52.8	46.08	59.47
Girls	86	5888	6.7	4.93	9.00	795	47284	53.7	45.00	62.10
<b>Ethnicity</b>										
Malay	122	10862	10.5	6.98	15.52	829	61577	59.6	53.75	65.14
Chinese	72	5786	10.1	7.16	14.08	328	23912	41.8	30.32	54.20
Indian	6	496	4.1	1.65	9.85	100	6269	51.9	43.24	60.48
Bumiputera Sabah	3	309	25.3	8.38	55.76	14	842	69.1	40.46	88.04
Bumiputera Sarawak						7	496	68.6	31.70	91.16
Others	1	50	1.7	0.23	11.98	22	1419	48.6	29.24	68.38
<b>School level</b>										
Primary school	96	9859	15.1	10.89	20.51	316	30413	46.5	33.43	60.11
Secondary school	108	7644	6.8	5.36	8.63	984	64101	57.2	50.26	63.78
<b>Class</b>										
Standard 4	33	3305	14.7	9.49	22.20	109	10567	47.2	33.30	61.47
Standard 5	30	2486	11.4	7.63	16.65	135	10992	50.3	34.66	65.95
Standard 6	33	4068	19.3	13.13	27.34	72	8853	41.9	29.79	55.10
Form 1	32	2139	9.3	6.46	13.12	192	12557	54.4	44.58	63.88
Form 2	22	1783	8.2	5.50	12.04	182	13284	61.0	50.60	70.54
Form 3	18	1316	5.9	3.34	10.16	200	12685	56.8	47.55	65.51
Form 4	20	1257	5.7	2.78	11.18	208	12619	56.8	51.02	62.38
Form 5	16	1149	5.1	3.33	7.60	202	12956	57.0	46.77	66.64
<b>School session</b>										
Morning session	134	11543	9.9	7.18	13.50	882	63626	54.6	47.42	61.52
Evening session	26	1949	8.1	5.68	11.45	183	12369	51.4	44.96	57.89
Morning and evening session	44	4010	10.9	6.60	17.46	234	18470	50.2	38.39	61.90
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	17	1742	13.3	7.81	21.75	85	6453	49.3	37.52	61.14
Normal (≥-2sd - ≤+1sd)	118	9884	9.3	7.25	11.73	806	57577	53.9	45.74	61.84
Overweight (>+1sd - ≤+2sd)	33	2737	9.3	5.41	15.39	202	14516	49.1	40.63	57.63
Obese (>+2sd)	36	3140	11.2	7.37	16.71	206	15924	56.9	50.32	63.23
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	14	1337	12.5	6.36	22.98	83	5563	51.9	40.22	63.30
Normal (≥-2sd)	190	16166	9.7	7.21	12.91	1217	88951	53.3	46.03	60.48

**Table 3.4.25 : Prevalence of snack food and/or drinks usually bought out of school area in a week among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	snack food and/ or drinks usually bought out of school area in a week				
	Count	Estimated Population	Never Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	900	65511	36.9	29.21	45.33
<b>Locality of school</b>					
Urban	900	65511	36.9	29.21	45.33
Rural					
<b>Sex</b>					
Boys	333	30565	34.2	26.98	42.20
Girls	567	34946	39.7	30.62	49.46
<b>Ethnicity</b>					
Malay	432	30917	29.9	23.48	37.25
Chinese	361	27539	48.1	34.03	62.50
Indian	84	5310	44.0	37.13	51.05
Bumiputera Sabah	1	68	5.6	0.60	36.61
Bumiputera Sarawak	3	227	31.4	8.84	68.30
Others	19	1451	49.7	29.57	69.89
<b>School level</b>					
Primary school	279	25099	38.4	22.40	57.37
Secondary school	621	40411	36.0	29.15	43.53
<b>Class</b>					
Standard 4	95	8537	38.1	21.48	58.06
Standard 5	112	8360	38.3	20.75	59.50
Standard 6	72	8203	38.8	22.80	57.71
Form 1	128	8388	36.3	26.44	47.54
Form 2	100	6698	30.8	20.75	43.02
Form 3	127	8351	37.4	27.17	48.81
Form 4	136	8345	37.6	32.89	42.46
Form 5	130	8630	38.0	28.98	47.85
<b>School session</b>					
Morning session	573	41442	35.5	28.19	43.64
Evening session	145	9723	40.4	34.46	46.72
Morning and evening session	182	14345	39.0	25.36	54.52
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	62	4896	37.4	26.00	50.40
Normal (≥-2sd - ≤+1sd)	552	39378	36.9	28.44	46.16
Overweight (>+1sd - ≤+2sd)	166	12310	41.6	32.80	51.05
Obese (>+2sd)	120	8927	31.9	25.07	39.59
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	54	3828	35.7	26.92	45.52
Normal (≥-2sd)	846	61683	37.0	29.10	45.62

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Table 3.4.26 : Type of snack food and/ or drinks usually bought out of school area among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of food/ drinks									
	Candy/chocolate					French fries/nugget/sausage				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	300	21681	12.2	9.95	14.90	352	25359	14.3	11.77	17.24
<b>Locality of school</b>										
Urban	300	21681	12.2	9.95	14.90	352	25359	14.3	11.77	17.24
Rural										
<b>Sex</b>										
Boys	122	11214	12.5	10.13	15.41	143	13400	15.0	12.16	18.32
Girls	178	10466	11.9	9.15	15.30	209	11959	13.6	10.72	17.06
<b>Ethnicity</b>										
Malay	177	13693	13.2	10.96	15.88	224	16224	15.7	12.66	19.25
Chinese	76	5245	9.2	5.62	14.69	108	7987	14.0	9.63	19.93
Indian	35	1989	16.5	10.76	24.39	12	633	5.2	2.49	10.69
Bumiputera Sabah	2	136	10.4	3.09	29.91	6	362	27.8	14.31	47.10
Bumiputera Sarawak	2	123	17.0	5.01	44.28	1	54	7.5	1.01	38.86
Others	8	496	17.0	6.63	37.04	1	99	3.4	0.36	25.42
<b>School level</b>										
Primary school	79	7499	11.5	7.26	17.75	71	6836	10.5	7.16	15.11
Secondary school	221	14182	12.6	10.38	15.27	281	18523	16.5	13.85	19.52
<b>Class</b>										
Standard 4	33	3135	14.0	8.72	21.69	21	1988	8.9	5.05	15.14
Standard 5	31	2454	11.4	7.52	16.88	31	2519	11.7	8.37	16.08
Standard 6	15	1909	9.0	4.10	18.60	19	2329	11.0	6.42	18.11
Form 1	48	3364	14.5	10.32	19.96	53	3399	14.6	9.83	21.23
Form 2	34	2318	10.6	6.53	16.89	47	3512	16.1	11.23	22.64
Form 3	44	2668	11.9	7.39	18.64	59	3856	17.2	12.61	23.06
Form 4	46	2568	11.6	8.84	14.97	66	4193	18.9	15.05	23.39
Form 5	49	3264	14.4	9.42	21.26	56	3563	15.7	13.06	18.70
<b>School session</b>										
Morning session	183	13131	11.3	9.24	13.70	260	18528	15.9	13.11	19.18
Evening session	50	3353	13.9	10.44	18.27	46	3265	13.5	10.31	17.57
Morning and evening session	67	5196	14.1	9.58	20.19	46	3566	9.7	6.50	14.10
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	25	2118	16.2	10.88	23.38	26	1949	14.9	10.65	20.44
Normal (≥-2sd - ≤+1sd)	184	13005	12.2	9.93	14.86	211	14850	13.9	11.40	16.87
Overweight (>+1sd - ≤+2sd)	47	3120	10.5	7.36	14.90	70	4917	16.6	12.21	22.23
Obese (>+2sd)	44	3438	12.2	8.14	17.99	45	3643	13.0	9.02	18.30
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	16	1023	9.5	4.28	19.93	25	1527	14.2	9.14	21.50
Normal (≥-2sd)	284	20657	12.4	10.16	15.02	327	23832	14.3	11.79	17.21

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Table 3.4.26 : Type of snack food and/ or drinks usually bought out of school area among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of snack food/ drinks									
	Flavoured drink/carbonated drink					Pickles				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	487	37153	20.9	16.23	26.55	26	1991	1.1	0.70	1.79
<b>Locality of school</b>										
Urban	487	37153	20.9	16.23	26.55	26	1991	1.1	0.70	1.79
Rural										
<b>Sex</b>										
Boys	225	21426	24.0	19.16	29.51	16	1421	1.6	0.94	2.66
Girls	262	15727	17.9	13.17	23.75	10	570	0.6	0.35	1.18
<b>Ethnicity</b>										
Malay	327	25469	24.6	18.97	31.28	10	764	0.7	0.35	1.54
Chinese	109	8572	15.0	9.80	22.37	13	993	1.7	1.14	2.65
Indian	31	1914	15.8	9.99	24.22	3	233	1.9	0.63	5.76
Bumiputera Sabah	7	412	31.7	11.28	62.82					
Bumiputera Sarawak	4	283	39.2	8.75	81.23					
Others	9	502	17.2	7.05	36.27					
<b>School level</b>										
Primary school	130	12991	19.9	11.13	33.10	5	397	0.6	0.18	2.03
Secondary school	357	24162	21.5	16.83	27.07	21	1594	1.4	0.92	2.18
<b>Class</b>										
Standard 4	40	3998	17.8	10.08	29.61	1	82	0.4	0.05	2.62
Standard 5	58	5006	23.2	10.36	44.17	3	209	1.0	0.24	3.84
Standard 6	32	3987	18.8	11.39	29.38	1	105	0.5	0.07	3.43
Form 1	70	4503	19.4	13.50	27.05	4	282	1.2	0.38	3.86
Form 2	77	5806	26.7	20.02	34.59	1	95	0.4	0.06	3.33
Form 3	75	4884	21.8	15.10	30.43	5	440	2.0	0.98	3.90
Form 4	69	4508	20.3	14.50	27.63	7	480	2.2	1.18	3.91
Form 5	66	4461	19.6	13.32	27.94	4	297	1.3	0.49	3.45
<b>School session</b>										
Morning session	340	26029	22.4	16.77	29.14	20	1550	1.3	0.80	2.21
Evening session	68	4564	18.9	12.80	27.06	3	221	0.9	0.25	3.32
Morning and evening session	79	6559	17.8	12.47	24.66	3	219	0.6	0.21	1.63
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	27	2300	17.6	11.78	25.38	2	129	1.0	0.23	4.10
Normal (≥-2sd - ≤+1sd)	315	23703	22.2	16.73	28.85	19	1439	1.3	0.84	2.16
Overweight (>+1sd - ≤+2sd)	71	5487	18.6	12.94	25.88	1	92	0.3	0.04	2.63
Obese (>+2sd)	73	5618	20.0	14.97	26.20	4	331	1.2	0.30	4.45
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	31	2382	22.2	11.69	38.12	3	286	2.7	0.97	7.11
Normal (≥-2sd)	456	34771	20.8	16.36	26.17	23	1704	1.0	0.60	1.74

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Table 3.4.26 : Type of snack food and/ or drinks usually bought out of school area among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Type of food/ drink									
	Snack food					Fish cracker				
	Count	Estimated Population	Percentage (%)	95% CI		Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	214	15389	8.7	7.15	10.47	116	8202	4.6	3.43	6.20
<b>Locality of school</b>										
Urban	214	15389	8.7	7.15	10.47	116	8202	4.6	3.43	6.20
Rural										
<b>Sex</b>										
Boys	78	7547	8.4	6.76	10.48	41	3749	4.2	2.75	6.33
Girls	136	7841	8.9	6.54	12.01	75	4453	5.1	3.48	7.29
<b>Ethnicity</b>										
Malay	90	6648	6.4	5.10	8.07	78	5785	5.6	4.35	7.15
Chinese	109	7798	13.7	11.30	16.46	24	1537	2.7	1.41	5.08
Indian	10	602	5.0	2.45	9.89	11	575	4.8	2.26	9.76
Bumiputera Sabah	1	46	3.6	0.48	21.85	3	305	23.4	7.27	54.44
Bumiputera Sarawak										
Others	4	295	10.1	3.72	24.60					
<b>School level</b>										
Primary school	58	5513	8.5	5.90	11.99	31	3082	4.7	2.83	7.80
Secondary school	156	9875	8.8	7.04	10.93	85	5120	4.6	3.17	6.52
<b>Class</b>										
Standard 4	16	1557	6.9	4.41	10.78	9	847	3.8	2.77	5.14
Standard 5	23	1738	8.1	4.77	13.29	12	923	4.3	1.88	9.47
Standard 6	19	2219	10.5	7.80	13.86	10	1312	6.2	2.52	14.37
Form 1	30	2021	8.7	4.68	15.60	19	1105	4.8	2.68	8.32
Form 2	23	1784	8.2	4.78	13.69	11	715	3.3	1.70	6.27
Form 3	32	1853	8.3	5.11	13.13	14	835	3.7	1.55	8.69
Form 4	33	1836	8.3	5.43	12.37	21	1253	5.6	3.36	9.31
Form 5	38	2382	10.5	6.85	15.70	20	1213	5.3	2.74	10.14
<b>School session</b>										
Morning session	130	9351	8.0	6.40	10.04	78	5649	4.9	3.46	6.76
Evening session	37	2565	10.6	5.75	18.83	18	1066	4.4	2.52	7.63
Morning and evening session	46	3423	9.3	6.83	12.47	20	1487	4.0	2.01	7.88
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	14	1006	7.7	4.87	11.93	10	754	5.8	3.18	10.23
Normal (≥-2sd - ≤+1sd)	137	9323	8.7	6.65	11.39	77	5401	5.1	3.64	6.99
Overweight (>+1sd - ≤+2sd)	32	2263	7.6	4.99	11.55	13	826	2.8	1.32	5.82
Obese (>+2sd)	31	2797	10.0	6.11	15.81	16	1220	4.3	2.77	6.75
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	18	1167	10.9	6.87	16.80	8	602	5.6	3.07	10.03
Normal (≥-2sd)	196	14222	8.5	7.02	10.33	108	7600	4.6	3.32	6.22

Table 3.4.26: Type of snack food and/ or drinks usually bought out of school area among adolescents by socio-demographic characteristics and nutritional status

Characteristics	Type of snack foods				
	Ice cream				
	Count	Estimated Population	Percentage (%)	95% CI	
			Lower	Upper	
<b>WP Kuala Lumpur</b>	347	25245	14.2	11.27	17.78
<b>Locality of school</b>					
Urban	347	25245	14.2	11.27	17.78
Rural					
<b>Sex</b>					
Boys	108	10450	11.7	8.52	15.81
Girls	239	14795	16.8	13.16	21.19
<b>Ethnicity</b>					
Malay	220	16485	15.9	12.31	20.36
Chinese	86	6028	10.6	7.46	14.78
Indian	32	1995	16.5	12.86	20.97
Bumiputera Sabah	1	58	4.4	0.52	29.05
Bumiputera Sarawak	1	107	14.8	1.61	64.61
Others	7	573	19.6	10.60	33.47
<b>School level</b>					
Primary school	106	10220	15.7	10.92	22.00
Secondary school	241	15025	13.4	9.91	17.81
<b>Class</b>					
Standard 4	35	3235	14.4	8.21	24.15
Standard 5	44	3592	16.7	11.40	23.70
Standard 6	27	3392	16.0	10.21	24.13
Form 1	50	3198	13.8	9.11	20.28
Form 2	57	3953	18.2	11.79	26.93
Form 3	38	2457	11.0	6.80	17.24
Form 4	54	3110	14.0	10.55	18.34
Form 5	42	2307	10.1	6.64	15.20
<b>School session</b>					
Morning session	225	16233	13.9	10.51	18.27
Evening session	59	4056	16.8	11.52	23.89
Morning and evening session	63	4956	13.4	10.00	17.78
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	19	1612	12.3	7.98	18.51
Normal (≥-2sd - ≤+1sd)	209	15148	14.2	11.07	18.02
Overweight (>+1sd - ≤+2sd)	55	3856	13.0	9.47	17.69
Obese (>+2sd)	64	4631	16.5	11.80	22.55
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	21	1603	14.9	9.60	22.52
Normal (≥-2sd)	326	23642	14.2	11.23	17.73

Table 3.4.27 : Media sources which affected dietary pattern among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Sources of media									
	Social media					Television				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	987	70649	39.7	34.73	45.00	696	52698	29.6	24.84	34.95
<b>Locality of school</b>										
Urban	987	70649	39.7	34.73	45.00	696	52698	29.6	24.84	34.95
Rural										
<b>Sex</b>										
Boys	370	34803	38.9	33.41	44.65	284	27036	30.2	24.20	36.96
Girls	617	35846	40.6	34.70	46.85	412	25663	29.1	24.55	34.09
<b>Ethnicity</b>										
Malay	658	47254	45.7	41.56	49.82	486	37770	36.5	32.67	40.50
Chinese	237	17133	29.9	22.57	38.51	129	9635	16.8	13.80	20.37
Indian	68	4648	38.5	31.21	46.33	59	3725	30.8	24.20	38.40
Bumiputera Sabah	8	518	39.8	18.87	65.29	6	370	28.4	14.58	48.06
Bumiputera Sarawak	4	298	41.2	14.67	74.07	3	206	28.5	7.04	67.79
Others	12	798	27.3	12.37	50.00	13	993	34.0	22.14	48.26
<b>School level</b>										
Primary school	225	21782	33.3	24.21	43.84	228	22425	34.3	24.21	46.02
Secondary school	762	48867	43.5	39.17	47.93	468	30273	26.9	23.41	30.80
<b>Class</b>										
Standard 4	72	7321	32.8	19.75	49.16	88	8339	37.3	30.20	45.09
Standard 5	99	8047	36.9	26.81	48.18	82	6753	30.9	21.52	42.23
Standard 6	54	6414	30.2	20.36	42.30	58	7333	34.5	19.81	52.99
Form 1	132	8659	37.3	31.84	43.07	102	6518	28.1	21.01	36.40
Form 2	141	9864	45.3	37.74	53.13	94	6925	31.8	24.73	39.86
Form 3	145	9337	41.7	35.09	48.59	112	7104	31.7	25.89	38.19
Form 4	170	10021	45.1	38.29	52.10	92	5394	24.3	20.38	28.65
Form 5	174	10985	48.3	37.43	59.36	68	4331	19.1	13.98	25.42
<b>School session</b>										
Morning session	662	46727	40.0	34.70	45.62	452	33333	28.6	24.14	33.43
Evening session	134	9035	37.6	33.20	42.16	91	5899	24.5	15.95	35.76
Morning and evening session	190	14837	40.2	29.70	51.63	153	13466	36.5	29.18	44.43
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	57	4513	34.5	28.05	41.51	59	4940	37.7	28.74	47.67
Normal (≥-2sd - ≤+1sd)	626	43860	41.0	35.49	46.83	397	28946	27.1	22.49	32.23
Overweight (>+1sd - ≤+2sd)	165	11897	40.1	31.80	49.07	114	8557	28.9	21.19	37.97
Obese (>+2sd)	138	10335	36.8	32.18	41.65	126	10255	36.5	30.81	42.60
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	59	3882	36.2	28.45	44.72	45	2990	27.9	18.21	40.15
Normal (≥-2sd)	928	66767	40.0	34.77	45.42	651	49708	29.8	24.89	35.15



Table 3.4.27 : Media sources which affected dietary pattern among adolescents by socio-demographic characteristics and nutritional status (Cont..)

Characteristics	Sources of media									
	Radio					Printed media				
	Count	Estimated Population	Prevalence (%)	95% CI		Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP Kuala Lumpur</b>	67	5106	2.9	2.03	4.04	130	9677	5.4	4.29	6.88
<b>Locality of school</b>										
Urban	67	5106	2.9	2.03	4.04	130	9677	5.4	4.29	6.88
Rural										
<b>Sex</b>										
Boys	36	3142	3.5	2.24	5.46	306	28170	31.5	23.38	40.86
Girls	31	1964	2.2	1.59	3.11	511	31884	36.1	29.19	43.73
<b>Ethnicity</b>										
Malay	35	2824	2.7	1.74	4.26	62	4777	4.6	3.53	6.01
Chinese	16	1224	2.1	1.39	3.27	51	3910	6.8	4.79	9.66
Indian	15	975	8.1	4.49	14.08	15	876	7.3	4.31	11.95
Bumiputera Sabah						1	68	5.2	0.56	34.72
Bumiputera Sarawak						1	46	6.4	0.76	38.02
Others	1	84	2.9	0.44	16.58					
<b>School level</b>										
Primary school	25	2107	3.2	1.76	5.82	42	3891	6.0	3.85	9.09
Secondary school	42	2999	2.7	1.77	4.01	88	5785	5.1	3.94	6.70
<b>Class</b>										
Standard 4	6	522	2.3	0.74	7.11	12	1147	5.1	3.84	6.84
Standard 5	16	1245	5.7	3.61	8.90	17	1335	6.1	3.65	10.07
Standard 6	3	339	1.6	0.70	3.59	13	1410	6.6	3.00	14.04
Form 1	16	1127	4.9	2.49	9.27	18	1249	5.4	3.52	8.14
Form 2	8	566	2.6	1.21	5.51	14	972	4.5	2.90	6.82
Form 3	5	267	1.2	0.54	2.60	11	703	3.1	2.15	4.56
Form 4	7	594	2.7	1.04	6.67	22	1337	6.0	4.01	8.93
Form 5	6	446	2.0	0.91	4.18	23	1524	6.7	3.38	12.85
<b>School session</b>										
Morning session	45	3695	3.2	2.00	4.98	88	6463	5.5	4.32	7.07
Evening session	15	935	3.9	1.88	7.87	20	1481	6.2	3.82	9.78
Morning and evening session	7	476	1.3	0.52	3.17	22	1732	4.7	3.01	7.25
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	2	179	1.4	0.30	6.03	12	850	6.5	3.40	12.07
Normal (≥-2sd - ≤+1sd)	34	2600	2.4	1.74	3.39	80	5837	5.5	4.24	7.01
Overweight (>+1sd - ≤+2sd)	14	1047	3.5	1.93	6.37	23	1715	5.8	3.27	10.02
Obese (>+2sd)	17	1281	4.6	2.31	8.80	15	1274	4.5	2.49	8.14
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	8	690	6.4	3.13	12.75	6	471	4.4	2.42	7.83
Normal (≥-2sd)	59	4416	2.6	1.84	3.79	124	9206	5.5	4.25	7.12

**Table 3.4.27 : Media sources which affected dietary pattern among adolescents by socio-demographic characteristics and nutritional status**

Characteristics	Sources of media				
	Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	817	60054	33.8	26.79	41.57
<b>Locality of school</b>					
Urban	817	60054	33.8	26.79	41.57
Rural					
<b>Sex</b>					
Boys	56	5293	5.9	4.33	8.03
Girls	74	4383	5.0	3.91	6.30
<b>Ethnicity</b>					
Malay	321	23828	23.0	20.79	25.43
Chinese	402	30428	53.2	45.59	60.59
Indian	62	3586	29.7	23.99	36.11
Bumiputera Sabah	6	480	36.9	13.99	67.81
Bumiputera Sarawak	4	265	36.7	12.01	71.09
Others	22	1467	50.2	29.58	70.82
<b>School level</b>					
Primary school	241	22022	33.7	19.27	51.92
Secondary school	576	38032	33.9	27.69	40.62
<b>Class</b>					
Standard 4	78	6962	31.2	16.71	50.56
Standard 5	94	7033	32.2	17.21	52.05
Standard 6	69	8027	37.8	23.16	55.08
Form 1	125	8264	35.6	28.26	43.65
Form 2	93	6457	29.7	21.65	39.16
Form 3	116	7642	34.1	25.33	44.16
Form 4	125	7916	35.6	29.04	42.80
Form 5	117	7753	34.1	22.18	48.44
<b>School session</b>					
Morning session	538	39782	34.1	27.04	41.91
Evening session	133	9114	37.9	29.08	47.61
Morning and evening session	146	11158	30.2	19.38	43.81
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	54	4045	30.9	20.13	44.23
Normal ( $\geq$ -2sd - $\leq$ +1sd)	519	37921	35.5	28.46	43.20
Overweight ( $>$ +1sd - $\leq$ +2sd)	130	9415	31.8	22.29	43.03
Obese ( $>$ +2sd)	114	8672	30.9	24.09	38.59
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	49	3609	33.6	21.52	48.39
Normal ( $\geq$ -2sd)	768	56444	33.8	26.72	41.69

### 3.5 Physical activity among adolescents (Primary 4 To Secondary 5) In WP Kuala Lumpur

**Contributors:** Nor Azian Mohd Zaki, Hazizi Abu Saad, Shahrulnaz Norhazli Nazri, Mohd Azahadi Omar

#### 3.5.1 Introduction

Physical activity is defined as any body movement produced by skeletal muscle that requires energy expenditure. According to World Health Organization (2010) and Malaysian Dietary Guidelines for Children and Adolescents (NCCFN, 2013), children and adolescents should accumulate at least 60 minutes or more of either moderate or vigorous intensity activity daily. Ideally, daily screen time should not more than two hours a day and children and adolescents should not be sedentary for more than 60 minutes at a time.

#### 3.5.2 Objectives

The general objective of this study was to assess physical activity pattern among adolescents and the specific objectives as follows:

- To determine the physical activity level.
- To evaluate the most five preferred physical activities during spare time.
- To assess the level of participation in physical education (PE) classes.
- To evaluate the duration of watching television, using computer and playing video games during weekend and schooling days.

#### 3.5.3 Variable definitions

**Physical Activity Assessment** - The physical activity Questionnaire for Older Children (PAQ-C) was adapted from Kowalski et al (2004) to assess the general level of physical activity of the adolescents.

**Physical Activity Classifications** - The total mean scores of PAQ-C was classified into three categories of either 'low physical activity' (Score: 1.00-2.33), 'moderate physical activity' (Score: 2.34-3.66) or 'high physical activity' (Score: 3.67-5.00).

**Screen time** - Screen time refers to the time spent on screen-based behaviours. For example: Watching television, playing video games and using the computer or surfing the internet.

#### 3.5.4 Findings

The PAQ-C mean score for the physical activity level for adolescent in WP Kuala Lumpur was 2.28 (95% CI: 2.17, 2.36) (**Table 3.5.1**). Overall, a total of 42.7 % (95% CI: 36.30, 49.44)

adolescents were physically active and 57.3% (95% CI: 50.56, 63.70) of them were not active. The prevalence of physically active was significantly higher among boys (48.1% (95% CI: 40.30, 55.95) compared to girls, 37.4% (95% CI: 31.31, 43.91). By school level, primary students [(54.4% (95% CI: 45.54, 63.06)] showed higher prevalence of physically active than secondary students [(36.1% (95% CI: 30.88, 41.74)]. In term of BMI-for-age status, there is no significant different of physically active among thinness [44.4% (95% CI: 32.61, 56.80)], normal [43.1% (95% CI: 35.98, 50.47), overweight [44.3% (95% CI: 37.72, 51.14)] and obese [38.9% (95% CI: 32.28, 46.06)] (**Table 3.5.2**).

The most popular spare-time physical activity according to percentage of adolescents in WP Kuala Lumpur were walking for exercise [82.8% (95% CI: 79.98, 85.31)] (**Table 3.5.3**). The prevalence of students who reported do not attend/very rare participated in PE class were 20.2% (95% CI: 17.10, 23.65)] (**Table 3.5.4**). During school days, 32.7% (95% CI: 27.87, 37.88) of adolescent watched television, using computer and playing video games more than 2 hours per day (**Table 3.5.6**). Meanwhile, 50.2% (95% CI: 44.61, 55.84) of the adolescents engaged on these activities more than 2 hours during weekend and (**Table 3.5.5**).

### 3.5.5 Discussion

The prevalence of physically active among adolescents in WP Kuala Lumpur (42.7%) was lower than national prevalence (44.6%). The prevalence of physically active was significantly higher among boys and primary students than girls and secondary school students. There was no significant difference in terms of school locality and BMI of age status of the respondents. The prevalence of adolescents that engaged on screen activities more than 2 hours during was higher during weekends than school days.

### 3.5.6 Conclusion

Based on National Health and Morbidity Survey (2017), 57.3% of children and adolescents in WP Kuala Lumpur were physically inactive. The prevalence of physically inactive among Malaysian adolescents was slightly lower as compared to the Malaysian School-Based Nutrition Survey (2012), but still remains high. Therefore, more programmes and strategies to increase physical activity should be implemented among children and adolescents in Malaysia.

### 3.5.7 Recommendations

Adolescents should be encouraged to be more active in their daily life. Policy and campaign to promote physical activity among children and adolescents should be enhanced and health promotion activities to increase physical activity should be promoted. A comprehensive surveillance system for monitoring physical activity should be developed to ensure compliance with physical activity recommendation among children and adolescents.

Parents should be encouraged to be good role models; be active, limit the amount of sedentary and screen time behaviours, and monitor physical activity sedentary behaviours as well as screen time of their children. Interviewing technique for physical activity assessment should be applied in future study. Adolescents should be encouraged to get physically active in their daily life. Formulating specific program and intensifying health campaign are essential to promote physical activity among children and adolescents. Developing surveillance systems for physical activity enables compliance based on the standard recommendations. Parents should instill active lifestyle, limit the amount of sedentary and screen time behaviors as for their children. Improving technique for physical activity assessment is necessary.

### References

1. Kowalski KC, Crocker PR, Donen RM. The physical activity questionnaire for older children (PAQ-C) and adolescents (PAQ-A) manual. College of Kinesiology, University of Saskatchewan. 2004;87.
2. Dan S, Nasir MM, Zalilah M. Sex and ethnic differentials in physical activity levels of adolescents in Kuantan. *Malays J Nutr.* 2007;13(2):109-20.
3. NCCFN (2013) Malaysian Dietary Guidelines for Children and Adolescents.
4. Malaysian School-Based Nutrition Survey (2012)
5. Wong JE, Parikh P, Poh BK, Deurenberg P; SEANUTS Malaysia Study Group. Physical Activity of Malaysian Primary School Children: Comparison by Sociodemographic Variables and Activity Domains. *Asia Pac J Public Health.* 2016 Jul;28(5 Suppl):35S-46S.
6. World Health Organization (2010). Global Strategy on Diet, Physical Activity and Health

**Table 3.5.1: Mean total scores in PAQ-C among adolescents within last 7 days by socio-demographic characteristics and BMI - for - age status**

Characteristic	Mean total scores in PAQ-C		
	Mean	95% CI	
		Lower	Upper
<b>WP KUALA LUMPUR</b>	2.26	2.17	2.36
<b>Locality of school</b>			
Urban	2.26	2.17	2.36
Rural	-	-	-
<b>Sex</b>			
Boys	2.34	2.24	2.44
Girls	2.19	2.09	2.29
<b>Class</b>			
Standard 4	2.48	2.34	2.63
Standard 5	2.40	2.24	2.56
Standard 6	2.44	2.22	2.65
Form 1	2.27	2.18	2.37
Form 2	2.17	2.03	2.31
Form 3	2.19	2.10	2.29
Form 4	2.09	2.01	2.17
Form 5	2.08	1.98	2.19
<b>Ethnicity</b>			
Malay	2.35	2.26	2.43
Chinese	2.08	1.97	2.20
Indian	2.37	2.25	2.49
Bumiputera Sabah	2.12	1.73	2.52
Bumiputera Sarawak	2.30	1.77	2.83
Others	2.55	2.30	2.81
<b>School Category</b>			
Primary	2.44	2.31	2.57
Secondary	2.16	2.10	2.23
<b>BMI-for-age status (BAZ)</b>			
Thinness (<-2sd)	2.26	2.10	2.43
Normal ( $\geq$ -2sd - $\leq$ +1sd)	2.28	2.17	2.38
Overweight (>+1sd - $\leq$ +2sd)	2.27	2.19	2.35
Obese (>+2sd)	2.21	2.09	2.32
<b>Height-for-age status (HAZ)</b>			
Stunting (<-2sd)	2.23	2.08	2.37
Normal ( $\geq$ -2sd)	2.27	2.17	2.36

**Note:**

Mean Score	Physical Activity Level (PAL)
1.00 - 2.33	Low
2.34 - 3.66	Moderate
3.67 - 5.00	High

(Kowalski et. al., 2004)

**Table 3.5.2: Distribution of adolescents according to physical activity level within last 7 days by socio-demographic characteristics and BMI - for - age status**

Characteristic	Physical activity level									
	Active					Not active				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	925	73065	42.7	36.30	49.44	1394	97866	57.3	50.56	63.70
<b>Locality of School</b>										
Urban	925	73065	42.7	36.30	49.44	1394	97866	57.3	50.56	63.70
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	436	41147	48.1	40.30	55.95	476	44432	51.9	44.05	59.70
Girls	489	31918	37.4	31.31	43.91	918	53433	62.6	56.09	68.69
<b>Class</b>										
Standard 4	124	11942	55.6	47.99	62.96	103	9537	44.4	37.04	52.01
Standard 5	133	10637	53.7	43.55	63.61	117	9160	46.3	36.39	56.45
Standard 6	89	11032	53.9	37.64	69.38	82	9434	46.1	30.62	62.36
Form 1	143	9652	43.1	38.40	48.02	199	12718	56.9	51.98	61.60
Form 2	108	7877	36.8	25.97	49.07	192	13547	63.2	50.93	74.03
Form 3	121	8176	37.6	29.14	46.85	215	13578	62.4	53.15	70.86
Form 4	106	6736	31.3	25.55	37.63	248	14806	68.7	62.37	74.45
Form 5	101	7013	31.7	25.33	38.91	238	15086	68.3	61.09	74.67
<b>Ethnicity</b>										
Malay	590	48031	48.4	41.66	55.20	740	51209	51.6	44.80	58.34
Chinese	219	17125	31.0	23.55	39.56	518	38134	69.0	60.44	76.45
Indian	81	5504	47.3	38.74	56.08	102	6125	52.7	43.92	61.26
Bumiputera Sabah	8	593	45.6	19.57	74.31	11	707	54.4	25.69	80.43
Bumiputera Sarawak	4	235	32.5	7.92	72.96	6	488	67.5	27.04	92.08
Others	23	1576	56.7	43.10	69.40	17	1202	43.3	30.60	56.90
<b>School Category</b>										
Primary	346	33611	54.4	45.54	63.06	302	28131	45.6	36.94	54.46
Secondary	346	39454	36.1	30.88	41.74	302	69735	63.9	58.26	69.12
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	64	5511	44.4	32.61	56.80	92	6909	55.6	43.20	67.39
Normal (≥-2sd - ≤+1sd)	573	44454	43.1	35.98	50.47	853	58741	56.9	49.53	64.02
Overweight (>+1sd - ≤+2sd)	157	12596	44.3	37.72	51.14	231	15820	55.7	48.86	62.28
Obese (>+2sd)	130	10459	38.9	32.28	46.06	218	16395	61.1	53.94	67.72
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	52	4411	42.6	32.31	53.59	94	5942	57.4	46.41	67.69
Normal (≥-2sd)	873	68654	42.8	36.32	49.44	1300	91924	57.2	50.56	63.68

Notes:

Low PAL is classified as not active

**Table 3.5.3: The five most preferred physical activities during spare time within the last 7 days based on the proportion of adolescents participated in it**

The five most preferred physical activities	Count	Prevalence (%)	95% CI	
			Lower	Upper
Walking for exercise	2009	82.8	79.98	85.31
Jogging/Running	1832	76.8	73.64	79.71
Tagging	1560	65.5	56.68	73.40
Badminton	1486	63.8	58.75	68.51
Cycling	1112	49.6	43.92	55.27

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Table 3.5.4: Level of participation in physical education (PE) classes among adolescents within last 7 days by socio demographic characteristics and BMI - for-age status (Cont.)

Characteristic	I do not attend the PE class / Very Rare					Occasionally/ Quite Often				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	478	35869	20.2	17.10	23.65	1307	93265	52.5	49.44	55.48
<b>Locality of school</b>										
Urban	478	35869	20.2	17.10	23.65	1307	93265	52.5	49.44	55.48
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	208	19808	22.1	18.92	25.69	456	42468	47.4	44.29	50.60
Girls	270	16061	18.2	14.53	22.56	851	50797	57.6	53.97	61.11
<b>Class</b>										
Standard 4	32	3119	13.9	10.57	18.11	124	11425	51.0	41.49	60.41
Standard 5	52	3989	18.3	13.03	25.15	136	10792	49.6	46.27	52.89
Standard 6	41	4513	21.3	7.91	45.91	85	10332	48.7	35.19	62.33
Form 1	48	3037	13.1	7.80	21.10	202	12978	55.9	50.73	60.91
Form 2	66	5292	24.3	17.19	33.20	163	11086	50.9	43.67	58.16
Form 3	57	3699	16.5	11.29	23.52	208	13242	59.1	53.43	64.58
Form 4	85	5403	24.3	17.90	32.13	205	12156	54.7	47.19	62.01
Form 5	97	6818	30.0	20.36	41.78	184	11255	49.5	40.27	58.77
<b>Ethnicity</b>										
Malay	235	17598	17.0	13.72	20.86	789	57419	55.4	52.37	58.48
Chinese	193	14892	26.1	21.85	30.75	390	27883	48.8	42.86	54.73
Indian	34	2225	18.4	11.00	29.22	91	5486	45.4	36.42	54.77
Bumiputera Sabah	4	281	21.6	5.90	54.84	12	749	57.6	29.32	81.60
Bumiputera Sarawak	1	53	7.4	0.76	45.32	4	304	42.0	17.03	71.92
Others	11	820	28.1	15.04	46.27	21	1424	48.8	36.11	61.61
<b>School level</b>										
Primary	125	11621	17.8	13.11	23.64	345	32549	49.8	45.26	54.27
Secondary	353	24248	21.6	18.04	25.61	962	60716	54.0	50.39	57.66
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	33	2918	22.3	16.29	29.72	89	6682	51.0	42.86	59.18
Normal (≥-2sd - ≤+1sd)	293	21262	19.9	16.50	23.79	782	54441	50.9	47.36	54.50
Overweight (>+1sd - ≤+2sd)	68	5300	17.9	13.99	22.57	239	17047	57.5	51.86	62.95
Obese (>+2sd)	84	6388	22.7	16.21	30.93	196	15050	53.6	46.88	60.14
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	37	2675	24.9	18.73	32.37	88	5939	55.4	47.51	62.94
Normal (≥-2sd)	441	33194	19.9	16.68	23.51	1219	87327	52.3	49.15	55.41



Table 3.5.4: Level of participation in physical education (PE) classes among adolescents within last 7 days by socio demographic characteristics and BMI - for-age status

Characteristic	Count	Estimated population	Always		
			Prevalence (%)	95% CI	
				Lower	Upper
<b>WP KUALA LUMPUR</b>	622	48616	27.4	23.97	31.02
<b>Locality of school</b>					
Urban	622	48616	27.4	23.97	31.02
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	293	27254	30.4	26.14	35.11
Girls	329	21362	24.2	19.75	29.32
<b>Class</b>					
Standard 4	81	7865	35.1	27.17	43.94
Standard 5	88	6987	32.1	24.95	40.20
Standard 6	52	6386	30.1	21.77	39.95
Form 1	104	7209	31.0	24.92	37.91
Form 2	75	5387	24.8	18.98	31.59
Form 3	81	5456	24.4	18.82	30.92
Form 4	74	4662	21.0	13.97	30.28
Form 5	67	4662	20.5	14.74	27.79
<b>Ethnicity</b>					
Malay	362	28549	27.6	23.58	31.94
Chinese	177	14391	25.2	20.16	30.95
Indian	65	4364	36.1	27.93	45.25
Bumiputera Sabah	3	271	20.8	4.42	59.92
Bumiputera Sarawak	5	366	50.6	22.50	78.34
Others	10	676	23.1	12.42	38.99
<b>School level</b>					
Primary	221	21238	32.5	27.89	37.41
Secondary	401	27377	24.4	21.12	27.94
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	42	3491	26.7	19.29	35.61
Normal (≥-2sd - ≤+1sd)	401	31173	29.2	24.93	33.80
Overweight (>+1sd - ≤+2sd)	95	7298	24.6	20.11	29.76
Obese (>+2sd)	84	6654	23.7	18.55	29.73
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	26	2115	19.7	13.18	28.43
Normal (≥-2sd)	596	46501	27.8	24.50	31.45

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Table 3.5.5: Length of time spent per day on watching television, using computer and playing video games at weekends among adolescents by socio-demographic characteristics and BMI-for-age status

Characteristic	Less than 2 hour					More than 2 hours				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	1158	88433	49.8	44.16	55.39	1248	89246	50.2	44.61	55.84
<b>Locality of school</b>										
Urban	1158	88433	49.8	44.16	55.39	1248	89246	50.2	44.61	55.84
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	454	42570	47.6	42.35	52.81	503	46944	52.4	47.19	57.65
Girls	704	45864	52.0	44.64	59.31	745	42302	48.0	40.69	55.36
<b>Class</b>										
Standard 4	156	14703	65.6	61.31	69.67	81	7706	34.4	30.33	38.69
Standard 5	157	12362	56.6	52.40	60.72	120	9476	43.4	39.28	47.60
Standard 6	107	12809	60.3	54.38	66.00	71	8422	39.7	34.00	45.62
Form 1	192	12354	53.4	46.50	60.16	161	10784	46.6	39.84	53.50
Form 2	133	9368	43.2	32.40	54.59	170	12342	56.8	45.41	67.60
Form 3	143	9368	41.8	35.00	48.98	203	13029	58.2	51.02	65.00
Form 4	128	7844	35.3	28.24	43.07	236	14377	64.7	56.93	71.76
Form 5	142	9624	42.3	31.21	54.29	206	13112	57.7	45.71	68.79
<b>Ethnicity</b>										
Malay	715	55450	53.6	48.25	58.84	670	48029	46.4	41.16	51.75
Chinese	299	23418	41.0	29.87	53.05	461	33764	59.0	46.95	70.13
Indian	112	7286	60.3	52.31	67.85	78	4789	39.7	32.15	47.69
Bumiputera Sabah	8	567	43.6	20.90	69.32	11	734	56.4	30.68	79.10
Bumiputera Sarawak	1	82	11.4	1.47	52.70	9	640	88.6	47.30	98.53
Others	23	1629	55.8	41.00	69.64	19	1290	44.2	30.36	59.00
<b>School level</b>										
Primary	420	39875	60.9	59.14	62.63	272	25603	39.1	37.37	40.86
Secondary	738	48559	43.3	37.66	49.07	976	63643	56.7	50.93	62.34
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	86	7095	54.2	45.13	62.99	78	5996	45.8	37.01	54.87
Normal ( $\geq-2sd - \leq+1sd$ )	691	52399	49.0	42.82	55.21	786	54547	51.0	44.79	57.18
Overweight ( $>+1sd - \leq+2sd$ )	219	16321	55.2	49.06	61.10	182	13270	44.8	38.90	50.94
Obese ( $>+2sd$ )	162	12619	45.1	37.63	52.71	201	15388	54.9	47.29	62.37
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	88	6449	60.1	51.58	68.07	63	4279	39.9	31.93	48.42
Normal ( $\geq-2sd$ )	1070	81985	49.1	43.28	54.96	1185	84967	50.9	45.04	56.72

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Table 3.5.6: Length of time spent per day on watching television, using computer and playing video games on schooling days among adolescents by socio-demographic characteristics and BMI-for-age status

Characteristic	Less than 2 hour					More than 2 hours				
	Unweighted count	Estimated population	Prevalence (%)	95% CI		Unweighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	1599	119643	67.3	62.12	72.13	807	58077	32.7	27.87	37.88
<b>Locality of school</b>										
Urban	1599	119643	67.3	62.12	72.13	807	58077	32.7	27.87	37.88
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	621	58110	64.9	59.29	70.04	337	31490	35.1	29.96	40.71
Girls	978	61533	69.8	63.65	75.36	470	26588	30.2	24.64	36.35
<b>Class</b>										
Standard 4	186	17336	77.4	65.86	85.83	51	5073	22.6	14.17	34.14
Standard 5	215	17005	77.9	70.20	84.02	62	4832	22.1	15.98	29.80
Standard 6	136	16307	76.8	66.02	84.95	42	4924	23.2	15.05	33.98
Form 1	242	15488	66.8	59.77	73.21	111	7687	33.2	26.79	40.23
Form 2	196	13922	64.0	53.74	73.07	108	7843	36.0	26.93	46.26
Form 3	212	13710	61.4	57.11	65.43	133	8636	38.6	34.57	42.89
Form 4	196	11802	53.1	47.07	59.06	168	10419	46.9	40.94	52.93
Form 5	216	14072	61.9	54.62	68.67	132	8663	38.1	31.33	45.38
<b>Ethnicity</b>										
Malay	925	69783	67.4	62.33	72.11	460	33734	32.6	27.89	37.67
Chinese	481	37077	64.8	51.18	76.43	279	20109	35.2	23.57	48.82
Indian	146	9419	78.0	71.28	83.52	44	2656	22.0	16.48	28.72
Bumiputera Sabah	12	905	69.6	50.59	83.67	7	395	30.4	16.33	49.41
Bumiputera Sarawak	4	303	42.0	11.55	80.01	6	419	58.0	19.99	88.45
Others	31	2156	73.8	50.94	88.46	11	764	26.2	11.54	49.06
<b>School level</b>										
Primary	537	50649	77.4	69.61	83.59	155	14829	22.6	16.41	30.39
Secondary	1062	68994	61.5	58.82	64.05	652	43249	38.5	35.95	41.18
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	113	9268	70.8	59.35	80.10	51	3823	29.2	19.90	40.65
Normal (≥-2sd - ≤+1sd)	975	71977	67.4	61.72	72.55	500	34869	32.6	27.45	38.28
Overweight (>+1sd - ≤+2sd)	278	20478	69.1	62.48	74.97	124	9168	30.9	25.03	37.52
Obese (>+2sd)	233	17920	63.8	57.45	69.68	131	10173	36.2	30.32	42.55
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	107	7763	72.4	63.41	79.82	44	2965	27.6	20.18	36.59
Normal (≥-2sd)	1492	111880	67.0	61.78	71.83	763	55112	33.0	28.17	38.22

### **3.6. Supplements intake among adolescents (Primary 4 to Secondary 5) in WP Kuala Lumpur**

**Contributors:** Fatimah Othman, Sam Azura Ahmad, Syafinaz Mohd Sallehuddin, Mohamad Ihsan Tahir, Safiah Mohd Yusof, Nur Azna Mahmud

#### **3.6.1 Introduction**

Dietary supplements are defined as “a product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: a vitamin, a mineral, an herb or other botanical, an amino acid, or a dietary substance for use by man to supplement the diet by increasing the total dietary intake, or a concentrate, metabolite, constituent, extract, or combination of the above ingredients” (DV Porter, 2001). The use of supplements becomes common behavior among people due to general health concerns. In 2014, approximately 54.1% and 40.2% of Malaysian adolescents consumed vitamin/mineral and food supplements respectively (Sien, Shahril, Mutalip, 2014). This prevalence was found to be higher than that in other countries (Picciano, Dwyer, Radimer, 2007; Yoon, Park, Kang, 2009; Sichert-Hellert and Kersting, 2004).

High dietary supplement intake suggests a wide use of dietary supplements among adolescents despite the unclear guideline or recommendation on dietary supplements. The long-term potentially dangerous effects related to unrestrained consumption of dietary supplements are still unknown and are becoming a matter of public health concern. Reports on dietary supplements intake pattern among Malaysian adolescents are limited. Therefore, the aims of the current study were to assess the frequency, reasons and types of vitamin/mineral and food supplement use among Malaysian adolescents.

#### **3.6.2 Objectives**

##### **General objective**

To determine the pattern of use of vitamin/mineral and food supplements among Malaysian adolescents.

##### **Specific objective**

- To determine the most commonly taken vitamin/mineral supplements.
- To determine the most commonly taken food supplements.
- To identify the reason(s) of taking vitamin/mineral supplements.
- To identify the reason(s) of taking food supplements.
- To determine the frequency of vitamin/mineral supplements intake.
- To determine the frequency of food supplements intake.

### 3.6.3 Findings

The prevalence of vitamin/minerals and food supplements intake among Kuala Lumpur adolescence was 44.3% (95% CI: 38.71, 50.02) (**Table 3.6.1**) and 33.2% (95% CI: 27.60, 39.29) (**Table 3.6.5**). There was no significant difference of vitamin/mineral and food supplement intakes between boys and girls, ethnicity, school classes and localities (**Table 3.6.1 and 3.6.5**). In average, the vitamin/mineral and food supplements were consumed everyday by 14.6% (95% CI 12.02, 17.54) and 9.2% (95% CI 6.74, 12.38) of adolescents (**Table 3.6.4 and Table 3.6.8**). The most commonly consumed vitamin/ minerals and food supplements were Vitamin C 31.9% (95% CI: 27.00, 37.09) (**Table 3.6.2**) and Bee product 13.5% (95% CI: 10.05, 17.84) (**Table 3.6.6**). The main reason for taking vitamin/minerals and food supplements was due to parent's advised 46.3% (95% CI: 40.8, 59.10) (**Table 3.6.3**) and 28.2% (95% CI: 24.30, 32.50) (**Table 3.6.7**).

### 3.6.4 Discussions

The prevalence of taking vitamin/minerals and food supplements among adolescence in Kuala Lumpur was almost similar with the national prevalence, which was 44.7% (95% CI: 42.49, 46.91) and 30.6% (95% CI: 28.90, 32.43). The consumption of Vitamin C and Bee Product were significantly higher compared with the other types of vitamin/mineral and food supplement and this result were consistent with the national finding. Finding from the survey in Kuala Lumpur showed that parent's advised was the main and significant reason for taking vitamin/mineral and food supplements among adolescents. It suggests the parents as strong influencer for food supplement and vitamin intake of the children.

### 3.6.5 Conclusions

Overall findings from this survey showed that more every four and three of ten adolescents in WP Kuala Lumpur took vitamin / mineral and food supplements. Every five and three of ten parents influenced the children's intake of vitamin/mineral and food supplement. Vitamin C and Bee product remain as the main type of vitamin and food supplement consumed by adolescents in WP Kuala Lumpur.

### 3.6.6 Recommendation

Advocating adolescents to eat balance and healthy meals is the main priority in designing health policy. However, the Ministry of Health should also establish guidelines, regulations, and policy of food supplements and vitamin/mineral intake as its consumption has become common among Malaysian adolescents. There is a need for further scientific research involving adolescents with the purpose of assessing the beneficial effects and safety of its long-term use. The guidelines and regulations should be made clear to parents and guardians for appropriate use of food supplements.

**References**

1. DV Porter. Special report: Dietary Supplements : recent chronology and legislations. *Nutr Rev.* 1995;53: 31–36.
2. Sien YP, Sahril N, Mutalip MHA, Zaki NAM, Ghaffar SA. Determinants of Dietary Supplements Use among Adolescents in Malaysia. *Asia Pacific J Public Heal.* SAGE PublicationsSage CA: Los Angeles, CA; 2014;26: 36S–43S. doi:10.1177/1010539514543681
3. Picciano MF, Dwyer JT, Radimer KL, Wilson DH, Fisher KD, Thomas PR, et al. Dietary Supplement Use Among Infants, Children, and Adolescents in the United States, 1999-2002. *Arch Pediatr Adolesc Med.* US Government Printing Office, Washington, DC; 2007;161: 978. doi:10.1001/archpedi.161.10.978
4. Yoon JY, Park HA, Kang JH, Kim KW, Hur YI, Park JJ, et al. Prevalence of Dietary Supplement Use in Korean Children and Adolescents: Insights from Korea National Health and Nutrition Examination Survey 2007-2009. *J Korean Med Sci.* 2012;27: 512. doi:10.3346/jkms.2012.27.5.512
5. Sichert-Hellert W, Kersting M. Vitamin and mineral supplements use in German children and adolescents between 1986 and 2003: results of the DONALD Study. *Ann Nutr Metab.* Karger Publishers; 2004;48: 414–9. doi:10.1159/000083574

Table 3.6.1: Prevalence of adolescents taking vitamin/ mineral supplements by socio-demographic characteristic

Characteristic	Taking vitamin / mineral supplement					Not taking vitamin / mineral supplement				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	1012	78739	44.3	38.71	50.02	1395	99034	55.7	49.98	61.29
<b>Locality of School</b>										
Urban	1012	78739	44.3	38.71	50.02	1395	99034	55.7	49.98	61.29
Rural										
<b>Sex</b>										
Boys	463	43329	48.4	41.74	55.04	495	46270	51.6	44.96	58.26
Girls	549	35410	40.2	33.91	46.74	900	52764	59.8	53.26	66.09
<b>Class</b>										
Standard 4	133	12762	57.0	43.54	69.41	104	9647	43.0	30.59	56.46
Standard 5	159	12572	57.6	50.52	64.32	118	9266	42.4	35.68	49.48
Standard 6	88	10556	49.7	41.97	57.49	90	10675	50.3	42.51	58.03
Remove class										
Form 1	164	10963	47.2	38.30	56.30	190	12260	52.8	43.70	61.70
Form 2	104	7655	35.2	25.83	45.81	200	14109	64.8	54.19	74.17
Form 3	118	7720	34.5	31.33	37.74	228	14677	65.5	62.26	68.67
Form 4	128	8406	37.9	31.21	45.10	235	13768	62.1	54.90	68.79
Form 5	118	8104	35.6	24.31	48.85	230	14631	64.4	51.15	75.69
<b>Ethnicity</b>										
Malay	614	48843	47.2	40.50	53.93	772	54721	52.8	46.07	59.50
Chinese	295	22597	39.5	33.60	45.75	465	34593	60.5	54.25	66.40
Indian	79	5588	46.3	33.39	59.68	111	6487	53.7	40.32	66.61
Bumiputera Sabah	10	713	54.8	25.73	80.93	9	588	45.2	19.07	74.27
Bumiputera Sarawak	2	129	17.8	4.19	51.80	8	594	82.2	48.20	95.81
Others	12	868	29.7	14.30	51.79	30	2051	70.3	48.21	85.70
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	91	7693	58.8	46.69	69.87	73	5398	41.2	30.13	53.31
Normal (≥-2sd - ≤+1sd)	613	46522	43.5	38.01	49.20	863	60376	56.5	50.80	61.99
Overweight (>+1sd - ≤+2sd)	165	12913	43.6	37.15	50.19	237	16732	56.4	49.81	62.85
Obese (>+2sd)	143	11610	41.3	33.63	49.48	221	16483	58.7	50.52	66.37
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	59	4635	43.2	33.37	53.61	92	6093	56.8	46.39	66.63
Normal (≥-2sd)	953	74103	44.4	38.75	50.12	1303	92941	55.6	49.88	61.25

**Table 3.6.2: Types of vitamin/ mineral usually consumed among adolescents by socio-demographic characteristics (Cont.)**

Characteristic	Multivitamin					Vitamin C				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	111	8320	4.7	3.66	5.98	725	56613	31.9	27.09	37.09
<b>Locality of School</b>										
Urban	111	8320	4.7	3.66	5.98	725	56613	31.9	27.09	37.09
Rural										
<b>Sex</b>										
Boys	47	4291	4.8	3.56	6.42	324	30371	33.9	28.44	39.88
Girls	64	4029	4.6	3.46	6.03	401	26242	29.8	24.31	35.94
<b>Class</b>										
Standard 4	12	1078	4.8	2.32	9.71	86	8438	37.7	27.33	49.24
Standard 5	16	1223	5.6	3.49	8.91	127	10225	47.0	35.99	58.26
Standard 6	9	1092	5.1	3.13	8.35	66	7875	37.1	29.89	44.93
Remove class										
Form 1	18	1190	5.1	2.98	8.67	124	8286	35.7	28.24	43.88
Form 2	6	497	2.3	0.70	7.17	82	5978	27.5	19.74	36.83
Form 3	13	793	3.6	1.81	6.87	82	5439	24.4	20.97	28.12
Form 4	20	1241	5.6	3.65	8.49	80	5083	22.9	18.81	27.63
Form 5	17	1207	5.3	2.81	9.83	78	5289	23.3	15.24	33.93
<b>Ethnicity</b>										
Malay	53	4169	4.0	3.02	5.35	460	36484	35.3	29.60	41.39
Chinese	38	2651	4.6	3.02	7.06	195	15210	26.6	21.84	32.04
Indian	16	1173	9.7	5.60	16.32	52	3644	30.2	21.31	40.82
Bumiputera Sabah	2	144	11.1	3.11	32.65	8	569	43.7	23.62	66.10
Bumiputera Sarawak						2	129	17.8	4.19	51.80
Others	2	183	6.3	1.52	22.47	8	578	19.8	8.48	39.63
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	5	427	3.3	1.45	7.24	67	5562	42.7	33.46	52.51
Normal ( $\geq -2sd - \leq +1sd$ )	71	5379	5.0	3.79	6.67	436	33512	31.4	25.98	37.35
Overweight ( $> +1sd - \leq +2sd$ )	19	1310	4.4	2.62	7.36	120	9273	31.3	25.89	37.23
Obese ( $> +2sd$ )	16	1204	4.3	2.71	6.71	102	8266	29.4	22.51	37.44
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	9	666	6.2	2.65	13.84	40	3229	30.1	21.17	40.85
Normal ( $\geq -2sd$ )	102	7654	4.6	3.65	5.75	685	53384	32.0	27.19	37.21



Table 3.6.2: Types of vitamin/ mineral usually consumed among adolescents by socio-demographic characteristics

Characteristic	Iron					Others				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	65	5547	3.1	2.05	4.73	124	9402	5.3	4.51	6.21
<b>Locality of School</b>										
Urban	65	5547	3.1	2.05	4.73	124	9402	5.3	4.51	6.21
Rural										
<b>Sex</b>										
Boys	40	3739	4.2	2.70	6.41	58	5396	6.0	4.69	7.72
Girls	25	1808	2.1	1.20	3.50	66	4006	4.5	3.64	5.68
<b>Class</b>										
Standard 4	20	1845	8.2	4.47	14.67	15	1449	6.5	5.03	8.27
Standard 5	6	448	2.1	0.71	5.84	14	1052	4.8	2.88	7.98
Standard 6	6	802	3.8	1.67	8.33	8	889	4.2	2.49	6.97
Remove class										
Form 1	5	322	1.4	0.61	3.10	19	1284	5.5	4.23	7.19
Form 2	7	506	2.3	1.01	5.25	12	877	4.0	2.23	7.19
Form 3	7	486	2.2	0.95	4.90	19	1235	5.5	3.78	8.03
Form 4	8	699	3.2	1.20	8.02	19	1337	6.0	3.45	10.33
Form 5	6	440	1.9	0.84	4.41	18	1278	5.6	4.11	7.68
<b>Ethnicity</b>										
Malay	48	4198	4.1	2.54	6.41	67	5270	5.1	4.30	6.02
Chinese	11	922	1.6	0.95	2.72	49	3621	6.3	5.20	7.70
Indian	5	379	3.1	1.36	7.05	7	452	3.7	1.60	8.48
Bumiputera Sabah										
Bumiputera Sarawak										
Others	1	49	1.7	0.25	10.23	1	59	2.0	0.22	16.01
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	9	841	6.5	3.35	12.11	9	772	5.9	2.44	13.72
Normal ( $\geq -2sd - \leq +1sd$ )	38	2926	2.7	1.89	3.96	75	5381	5.0	4.16	6.10
Overweight ( $> +1sd - \leq +2sd$ )	6	683	2.3	0.81	6.37	23	1915	6.5	4.28	9.63
Obese ( $> +2sd$ )	12	1097	3.9	2.15	7.00	17	1335	4.8	3.39	6.63
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	2	121	1.1	0.24	5.14	8	619	5.8	1.98	15.67
Normal ( $\geq -2sd$ )	63	5426	3.3	2.15	4.89	116	8783	5.3	4.44	6.23

Table 3.6.3: Reasons for taking vitamin/ mineral among adolescents by socio-demographic characteristics

Characteristic	Doctor's Instruction					Parents' advice				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	150	11793	15.0	12.4	18.0	470	36412	46.3	40.8	51.9
<b>Locality of School</b>	-	-	-	-	-	-	-	-	-	-
Urban	150	11793	15.0	12.4	18.0	470	36412	46.3	40.8	51.9
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	77	7041	16.2	13.2	19.9	195	18557	42.8	35.9	50.0
Girls	73	4753	13.4	10.8	16.6	275	17855	50.5	45.0	56.0
<b>Class</b>										
Standard 4	20	1967	15.4	11.9	19.7	58	5614	44.0	38.7	49.4
Standard 5	32	2586	20.6	12.8	31.4	73	5720	45.5	31.5	60.2
Standard 6	9	1062	10.1	5.0	19.1	47	5548	52.6	40.5	64.3
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	26	1750	16.0	8.1	29.0	78	5216	47.6	36.5	58.9
Form 2	11	856	11.2	6.6	18.3	50	3587	46.9	32.9	61.4
Form 3	15	1000	13.0	6.6	24.2	54	3425	44.7	36.9	52.7
Form 4	21	1492	17.8	11.6	26.2	51	3279	39.0	29.4	49.5
Form 5	16	1080	13.3	7.4	22.7	59	4022	49.6	33.0	66.3
<b>Ethnicity</b>										
Malay	104	8471	17.3	14.3	20.9	266	20869	42.7	36.5	49.2
Chinese	25	1938	8.6	5.9	12.3	154	11878	52.7	43.8	61.4
Indian	16	1052	18.8	10.1	32.4	40	2904	52.0	39.9	63.8
Bumiputera Sabah	2	182	25.6	4.6	70.8	5	326	25.6	4.6	70.8
Bumiputera Sarawak										
Others	3	150	17.3	3.8	52.4	5	435	50.1	21.7	78.4
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	16	3635	18.0	11.2	27.7	43	1985	47.3	38.7	56.0
Normal ( $\geq -2sd - \leq +1sd$ )	87	6609	14.2	11.1	17.9	297	22479	48.3	42.0	54.7
Overweight (> +1sd - $\leq +2sd$ )	19	1450	11.3	7.9	15.8	74	5640	43.8	33.5	54.7
Obese (> +2sd)	28	2348	20.2	14.2	28.0	56	4657	40.1	30.5	50.6
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	7	430	9.3	4.5	18.2	33	2354	50.8	39.4	62.1
Normal ( $\geq -2sd$ )	143	11363	15.3	12.7	18.5	437	34058	46.0	40.3	51.8

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Table 3.6.3: Reasons for taking vitamin/ mineral among adolescents by socio-demographic characteristics (Cont.)

Characteristic	Self awareness					Influences by friends				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	298	23390	29.7	25.5	34.3	21	1574	2.0	1.2	3.3
<b>Locality of School</b>	-	-	-	-	-	-	-	-	-	-
Urban	298	23390	29.7	25.5	34.3	21	1574	2.0	1.2	3.3
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	144	13453	31.0	24.9	37.9	11	1033	2.4	1.4	4.1
Girls	154	9937	28.1	24.6	31.9	10	541	1.5	0.8	3.0
<b>Class</b>										
Standard 4	45	4245	33.3	26.9	40.3	1	80	0.6	0.1	3.8
Standard 5	43	3444	27.4	16.6	41.7	2	140	1.1	0.3	4.1
Standard 6	26	3221	30.5	19.1	44.9	1	111	1.1	0.1	7.9
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	46	3089	28.2	20.7	37.1	5	353	3.2	1.3	7.6
Form 2	30	2240	29.3	17.2	45.1	3	289	3.8	1.1	12.6
Form 3	39	2610	34.0	25.7	43.4	1	51	0.7	0.1	5.2
Form 4	39	2417	28.7	19.8	39.8	4	272	3.2	1.2	8.3
Form 5	30	2123	26.2	17.3	37.6	4	278	3.4	1.1	10.2
<b>Ethnicity</b>										
Malay	189	969	31.4	27.0	36.3	12	969	2.0	1.0	3.7
Chinese	84	6271	27.8	20.6	36.4	7	506	2.2	0.9	5.5
Indian	20	1400	25.1	15.8	37.4	1	50	0.9	0.1	5.9
Bumiputera Sabah	1	68	9.5	0.9	54.0	-	-	-	-	-
Bumiputera Sarawak										
Others	2	175	20.2	7.3	44.6	1	50	5.7	0.5	40.3
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	24	1985	25.8	17.6	36.2	3	197	2.6	0.7	8.5
Normal (≥ - 2sd - ≤+ 1sd )	179	13792	29.6	25.3	34.4	7	527	1.1	0.5	2.5
Overweight (> +1sd - ≤+ 2sd)	48	3926	30.5	21.9	40.8	9	721	5.6	2.9	10.6
Obese (> + 2sd)	47	3687	31.8	22.4	42.9	2	129	1.1	0.3	4.8
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	15	1412	30.5	19.0	45.0	-	-	-	-	-
Normal (≥-2sd )	283	1574	29.7	25.6	34.1	21	1574	2.1	1.3	3.6

**Table 3.6.3: Reasons for taking vitamin/ mineral among adolescents by socio-demographic characteristics (Cont.)**

Characteristic	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	62	4762	6.1	4.2	8.6
<b>Locality of School</b>	-	-	-	-	-
Urban	62	4762	6.1	4.2	8.6
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	33	2974	6.9	4.2	11.0
Girls	29	1788	5.1	3.0	8.4
<b>Class</b>					
Standard 4	8	766	6.0	2.3	14.6
Standard 5	5	367	2.9	0.6	12.9
Standard 6	4	510	4.8	2.1	10.6
Remove class	-	-	-	-	-
Form 1	7	449	4.1	1.8	9.1
Form 2	10	683	8.9	4.9	15.7
Form 3	8	583	7.6	4.0	13.8
Form 4	11	802	9.5	5.9	15.1
Form 5	9	602	7.4	3.0	17.2
<b>Ethnicity</b>					
Malay	37	2760	5.7	3.4	9.1
Chinese	20	1624	7.2	5.2	10.0
Indian	2	183	3.3	0.5	19.6
Bumiputera Sabah	2	137	19.3	3.4	62.0
Bumiputera Sarawak					
Others	1	58	6.7	0.7	41.3
<b>BMI-for age status (BAZ)</b>					
Thinness (<-2sd )	4	386	5.0	1.3	17.4
Normal (≥ - 2sd - ≤+ 1sd )	37	2698	5.8	3.7	9.0
Overweight (> +1sd - ≤+ 2sd)	12	938	7.3	4.1	12.8
Obese (> + 2sd)	9	739	6.4	2.4	16.0
<b>Height-for - age status (HAZ)</b>					
Stunting (<-2sd )	4	440	9.5	3.9	21.1
Normal (≥-2sd )	58	4322	5.8	3.9	8.6

**Table 3.6.4: Frequency of taking vitamin/ mineral among adolescents by socio-demographic characteristics (Cont.)**

Characteristic	Everyday					5 to 6 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	333	25877	14.6	12.02	17.54	128	10130	5.7	4.39	7.38
<b>Locality of School</b>										
Urban	333	25877	14.6	12.02	17.54	128	10130	5.7	4.39	7.38
Rural										
<b>Sex</b>										
Boys	152	14237	15.9	12.83	19.55	65	6016	6.7	4.72	9.48
Girls	181	11640	13.2	10.40	16.61	63	4115	4.7	3.65	5.94
<b>Class</b>										
Standard 4	65	6089	27.2	19.15	37.02	21	1993	8.9	5.51	14.05
Standard 5	41	3129	14.4	10.07	20.13	21	1704	7.8	4.86	12.38
Standard 6	29	3415	16.1	10.77	23.34	6	702	3.3	1.86	5.81
Remove class										
Form 1	42	2983	12.8	9.67	16.86	33	2351	10.1	6.48	15.46
Form 2	26	1898	8.7	5.45	13.67	18	1457	6.7	3.62	12.05
Form 3	37	2452	10.9	8.16	14.54	11	703	3.1	1.65	5.88
Form 4	54	3233	14.6	10.81	19.38	6	422	1.9	0.98	3.65
Form 5	39	2677	11.8	7.44	18.16	12	798	3.5	1.68	7.16
<b>Ethnicity</b>										
Malay	183	14671	14.2	10.92	18.20	76	6181	6.0	4.36	8.14
Chinese	100	7691	13.4	10.20	17.53	34	2632	4.6	2.63	7.94
Indian	40	2715	22.5	14.52	33.12	15	1113	9.2	5.16	15.94
Bumiputera Sabah	4	326	25.1	4.60	69.95	1	58	4.4	0.52	29.05
Bumiputera Sarawak						1	46	6.4	0.76	38.02
Others	6	473	16.2	3.65	49.64	1	99	3.4	0.36	25.42
<b>BMI-for age status (BAZ)</b>										
Thinness (< -2sd )	30	2607	19.9	12.71	29.81	8	692	5.3	2.76	9.89
Normal (≥ - 2sd - ≤+ 1sd )	203	15490	14.5	11.54	18.07	81	6167	5.8	4.26	7.78
Overweight (> +1sd - ≤+ 2sd)	54	4142	14.0	10.12	18.98	24	2020	6.8	4.02	11.32
Obese (> + 2sd)	46	3638	13.0	9.84	16.86	15	1252	4.5	2.70	7.27
<b>Height-for - age status (HAZ)</b>										
Stunting (< -2sd )	19	1477	13.8	9.90	18.84	4	250	2.3	0.79	6.68
Normal (≥ -2sd )	314	24400	14.6	11.97	17.72	124	9881	5.9	4.53	7.69

**Table 3.6.4: Frequency of taking vitamin/ mineral among adolescents by socio-demographic characteristics**

Characteristic	3 to 4 times per week					1 to 2 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	213	17117	9.6	8.17	11.32	343	26197	14.7	12.62	17.16
<b>Locality of School</b>										
Urban	213	17117	9.6	8.17	11.32	343	26197	14.7	12.62	17.16
Rural										
<b>Sex</b>										
Boys	106	10102	11.3	8.91	14.19	142	13121	14.7	12.32	17.36
Girls	107	7014	8.0	6.53	9.66	201	13076	14.8	11.25	19.30
<b>Class</b>										
Standard 4	18	1774	7.9	5.60	11.09	32	3241	14.5	9.16	22.09
Standard 5	37	3004	13.8	9.61	19.45	60	4779	22.0	14.79	31.34
Standard 6	26	3150	14.8	9.17	23.11	28	3373	15.9	11.49	21.55
Remove class										
Form 1	34	2312	10.0	7.26	13.51	54	3304	14.2	11.95	16.86
Form 2	20	1521	7.0	4.44	10.84	43	2896	13.3	9.18	18.90
Form 3	31	2055	9.2	6.70	12.44	42	2778	12.4	10.02	15.25
Form 4	20	1395	6.3	4.10	9.53	43	2984	13.5	9.51	18.71
Form 5	27	1905	8.4	5.77	12.01	41	2841	12.5	8.40	18.18
<b>Ethnicity</b>										
Malay	128	10565	10.2	7.98	12.98	235	18274	17.7	15.27	20.33
Chinese	72	5596	9.8	8.23	11.60	86	6420	11.2	9.35	13.42
Indian	11	819	6.8	3.82	11.75	12	826	6.8	3.91	11.72
Bumiputera Sabah	2	137	10.6	2.21	38.16	3	191	14.7	4.13	40.82
Bumiputera Sarawak						2	189	26.2	6.00	66.28
Others						5	296	10.1	4.38	21.77
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	20	1721	13.1	8.48	19.81	33	2653	20.3	14.32	27.87
Normal ( $\geq -2sd - \leq +1sd$ )	129	10066	9.4	7.74	11.42	199	15042	14.1	10.91	17.99
Overweight (> +1sd - $\leq +2sd$ )	29	2406	8.1	5.56	11.69	59	4386	14.8	11.22	19.27
Obese (> +2sd)	35	2924	10.4	6.67	15.88	52	4115	14.6	11.12	19.05
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	17	1387	12.9	7.10	22.39	18	1477	13.8	9.02	20.45
Normal ( $\geq -2sd$ )	196	15729	9.4	8.05	11.00	325	24720	14.8	12.64	17.27

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Table 3.6.5: Prevalence of adolescents taking food supplements by socio-demographic characteristic

Characteristic	Taking food supplement					Not taking food supplement				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	751	58961	33.2	27.60	39.29	1654	118685	66.8	60.71	72.40
<b>Locality of School</b>										
Urban	751	58961	33.2	27.60	39.29	1654	118685	66.8	60.71	72.40
Rural										
<b>Sex</b>										
Boys	359	33664	37.6	30.35	45.46	598	55855	62.4	54.54	69.65
Girls	392	25297	28.7	24.05	33.86	1056	62830	71.3	66.14	75.95
<b>Class</b>										
Standard 4	117	11123	49.8	40.14	59.50	119	11206	50.2	40.50	59.86
Standard 5	113	8941	40.9	31.25	51.39	164	12897	59.1	48.61	68.75
Standard 6	63	7730	36.4	26.14	48.08	115	13501	63.6	51.92	73.86
Remove class										
Form 1	103	6903	29.7	21.81	39.08	251	16320	70.3	60.92	78.19
Form 2	84	6064	27.9	19.13	38.67	220	15701	72.1	61.33	80.87
Form 3	96	6420	28.7	22.83	35.31	250	15977	71.3	64.69	77.17
Form 4	87	5769	26.1	19.62	33.76	275	16358	73.9	66.24	80.38
Form 5	88	6011	26.4	16.62	39.32	260	16725	73.6	60.68	83.38
<b>Ethnicity</b>										
Malay	461	37576	36.3	29.39	43.84	924	65909	63.7	56.16	70.61
Chinese	212	15908	27.8	22.85	33.44	547	41235	72.2	66.56	77.15
Indian	58	3972	32.9	22.83	44.83	132	8103	67.1	55.17	77.17
Bumiputera Sabah	9	703	54.0	25.77	79.90	10	598	46.0	20.10	74.23
Bumiputera Sarawak	2	129	17.8	4.19	51.80	8	594	82.2	48.20	95.81
Others	9	673	23.1	10.77	42.66	33	2247	76.9	57.34	89.23
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	73	6346	48.5	38.24	58.85	91	6745	51.5	41.15	61.76
Normal ( $\geq -2sd - \leq +1sd$ )	445	34289	32.1	26.73	37.97	1030	72563	67.9	62.03	73.27
Overweight ( $> +1sd - \leq +2sd$ )	116	9317	31.4	23.67	40.38	286	20329	68.6	59.62	76.33
Obese ( $> +2sd$ )	117	9009	32.2	26.14	38.83	246	19004	67.8	61.17	73.86
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	46	3587	33.4	24.72	43.46	105	7141	66.6	56.54	75.28
Normal ( $\geq -2sd$ )	705	55374	33.2	27.43	39.47	1549	111545	66.8	60.53	72.57

**Table 3.6.6: Types of food supplement usually consumed among adolescents by socio-demographic characteristics (Cont.)**

Characteristic	Spirulina					Fish oil				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	59	4620	2.6	1.85	3.64	152	11986	6.7	5.18	8.74
<b>Locality of School</b>										
Urban	59	4620	2.6	1.85	3.64	152	11986	6.7	5.18	8.74
Rural										
<b>Sex</b>										
Boys	28	2654	3.0	1.79	4.85	77	7297	8.1	5.88	11.17
Girls	31	1967	2.2	1.67	2.98	75	4689	5.3	3.84	7.34
<b>Class</b>										
Standard 4	9	886	4.0	2.17	7.10	20	1819	8.1	5.99	10.92
Standard 5	7	561	2.6	1.40	4.67	22	1716	7.9	5.43	11.23
Standard 6	3	405	1.9	0.78	4.58	12	1393	6.6	3.41	12.26
Remove class										
Form 1	6	352	1.5	0.77	2.96	19	1366	5.9	2.87	11.69
Form 2	8	650	3.0	1.20	7.21	13	1086	5.0	1.55	14.88
Form 3	9	664	3.0	1.28	6.69	22	1387	6.2	3.86	9.80
Form 4	10	610	2.8	1.80	4.21	15	1082	4.9	1.97	11.64
Form 5	7	493	2.2	0.99	4.67	29	2138	9.4	5.17	16.51
<b>Ethnicity</b>										
Malay	33	2707	2.6	1.88	3.63	62	5107	4.9	3.19	7.56
Chinese	14	891	1.6	0.90	2.69	66	5102	8.9	6.57	12.03
Indian	7	571	4.7	1.86	11.48	19	1362	11.3	6.00	20.23
Bumiputera Sabah	3	304	23.4	7.55	53.27	2	182	14.0	2.01	56.42
Bumiputera Sarawak										
Others	2	147	5.1	1.49	15.75	3	233	8.0	1.83	28.77
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	4	416	3.2	0.97	9.93	14	1096	8.4	4.70	14.49
Normal (≥ - 2sd - ≤+ 1sd )	35	2454	2.3	1.54	3.41	98	7693	7.2	5.24	9.82
Overweight (> +1sd - ≤+ 2sd)	4	322	1.1	0.39	2.99	18	1454	4.9	3.22	7.40
Obese (> + 2sd)	16	1428	5.1	2.92	8.72	22	1743	6.2	4.20	9.07
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	7	523	4.9	1.84	12.28	6	489	4.6	1.89	10.57
Normal (≥-2sd )	52	4097	2.5	1.75	3.44	146	11497	6.9	5.27	8.95



Table 3.6.6: Types of food supplement usually consumed among adolescents by socio-demographic characteristics (Cont.)

Characteristic	Bee Product					Chicken essence				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	304	23949	13.5	10.05	17.84	64	4908	2.8	2.11	3.61
<b>Locality of School</b>										
Urban	304	23949	13.5	10.05	17.84	64	4908	2.8	2.11	3.61
Rural										
<b>Sex</b>										
Boys	137	12671	14.1	9.81	19.96	30	2890	3.2	2.09	4.95
Girls	167	11279	12.8	9.58	16.89	34	2018	2.3	1.38	3.77
<b>Class</b>										
Standard 4	47	4421	19.7	12.19	30.31	9	934	4.2	2.03	8.37
Standard 5	49	3906	17.9	10.18	29.50	10	750	3.4	2.10	5.57
Standard 6	33	4039	19.0	13.53	26.08	5	552	2.6	0.99	6.66
Remove class										
Form 1	42	2769	11.9	7.87	17.66	8	546	2.4	1.19	4.60
Form 2	38	2655	12.2	8.16	17.84	5	306	1.4	0.44	4.37
Form 3	37	2425	10.8	7.10	16.17	4	351	1.6	0.67	3.61
Form 4	28	1725	7.8	4.57	13.00	12	733	3.3	1.98	5.50
Form 5	30	2010	8.8	4.28	17.37	11	736	3.2	1.53	6.72
<b>Ethnicity</b>										
Malay	229	18518	17.9	13.63	23.10	27	2366	2.3	1.33	3.90
Chinese	61	4591	8.0	5.65	11.30	28	2008	3.5	2.63	4.68
Indian	11	671	5.6	3.14	9.64	6	359	3.0	1.12	7.66
Bumiputera Sabah	2	124	9.5	2.05	34.46	2	93	7.1	0.93	38.55
Bumiputera Sarawak	1	46	6.4	0.76	38.02	1	82	11.4	1.47	52.70
Others										
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	33	3080	23.5	15.27	34.45	7	664	5.1	2.11	11.70
Normal (≥ - 2sd - ≤+ 1sd )	181	13830	12.9	9.77	16.95	35	2624	2.5	1.69	3.56
Overweight (> +1sd - ≤+ 2sd)	45	3695	12.5	7.50	20.00	13	984	3.3	1.82	5.97
Obese (> + 2sd)	45	3344	11.9	8.34	16.72	9	637	2.3	1.11	4.56
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	22	1841	17.2	12.50	23.11	1	100	0.9	0.12	6.99
Normal (≥-2sd )	282	22108	13.2	9.80	17.65	63	4809	2.9	2.17	3.82

**Table 3.6.6: Types of food supplement usually consumed among adolescents by socio-demographic characteristics**

Characteristic	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	192	15156	8.5	6.56	11.02
<b>Locality of School</b>					
Urban	192	15156	8.5	6.56	11.02
Rural					
<b>Sex</b>					
Boys	95	9026	10.1	7.38	13.60
Girls	97	6130	7.0	5.02	9.57
<b>Class</b>					
Standard 4	34	3317	14.8	11.41	18.99
Standard 5	28	2330	10.7	6.22	17.71
Standard 6	12	1558	7.3	4.14	12.69
Remove class					
Form 1	28	1870	8.1	5.13	12.43
Form 2	23	1660	7.6	4.71	12.13
Form 3	24	1648	7.4	4.45	11.91
Form 4	30	2094	9.5	6.18	14.24
Form 5	13	678	3.0	1.68	5.25
<b>Ethnicity</b>					
Malay	117	9553	9.2	6.67	12.62
Chinese	54	4194	7.3	4.92	10.80
Indian	17	1116	9.2	4.78	17.14
Bumiputera Sabah					
Bumiputera Sarawak					
Others	4	293	10.0	3.32	26.55
<b>BMI-for age status (BAZ)</b>					
Thinness (<-2sd )	15	1168	8.9	5.33	14.56
Normal (≥ - 2sd - ≤+ 1sd )	110	8827	8.3	5.99	11.29
Overweight (> +1sd - ≤+ 2sd)	38	2973	10.0	7.02	14.12
Obese (> + 2sd)	29	2187	7.8	5.38	11.15
<b>Height-for - age status (HAZ)</b>					
Stunting (<-2sd )	12	847	7.9	4.50	13.47
Normal (≥-2sd )	180	14309	8.6	6.49	11.23

**Table 3.6.7: Reasons for taking food supplements among adolescents by socio-demographic characteristics**

Characteristic	Doctor's Instruction					Parents' advice				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	87	7207	9.2	6.51	12.73	280	22181	28.2	24.25	32.49
<b>Locality of School</b>										
Urban	87	7207	9.2	6.51	12.73	280	22181	28.2	24.25	32.49
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	55	5045	11.6	8.48	15.78	125	11752	27.1	22.67	32.09
Girls	32	2162	6.1	4.12	8.99	155	10429	29.5	24.69	34.79
<b>Class</b>			0.0	0.00	0.00			0.0	0.00	0.00
Standard 4	17	1726	13.5	9.52	18.86	44	4217	33.0	25.76	41.24
Standard 5	16	1271	10.1	4.90	19.70	53	4203	33.4	28.12	39.21
Standard 6	3	335	3.2	0.80	11.77	27	3274	31.0	23.30	39.95
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	13	965	8.8	3.13	22.41	40	2795	25.5	16.50	37.20
Form 2	9	713	9.3	3.84	20.90	25	1681	22.0	11.94	36.84
Form 3	7	542	7.0	2.55	17.90	30	1899	24.6	14.93	37.74
Form 4	12	861	10.3	5.84	17.54	30	2001	23.9	16.69	33.08
Form 5	10	792	9.8	3.83	22.78	31	2112	26.1	18.45	35.46
<b>Ethnicity</b>										
Malay	60	5100	10.4	7.47	14.41	163	13364	27.4	21.75	33.80
Chinese	12	956	4.2	1.97	8.89	90	6875	30.5	25.59	35.87
Indian	11	899	16.1	6.80	33.52	22	1545	27.6	18.05	39.84
Bumiputera Sabah	2	144	20.2	7.94	42.77	3	215	30.1	12.85	55.76
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	2	108	12.4	2.25	46.49	2	183	21.0	4.66	59.18
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	7	596	7.7	3.90	14.79	34	3010	39.1	32.96	45.64
Normal (≥ -2sd - ≤+1sd)	48	3868	8.3	5.42	12.56	169	13017	28.0	22.72	33.99
Overweight (>+1sd - ≤+2sd)	14	3337	9.1	5.35	15.15	42	2418	25.8	19.22	33.79
Obese (>+2sd)	18	1565	13.5	7.65	22.66	35	2818	24.3	15.48	35.93
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	4	257	5.5	2.16	13.44	18	1316	28.4	17.13	43.19
Normal (≥-2sd)	83	6950	9.4	6.70	13.00	262	20865	28.2	24.08	32.67

Table 3.6.7: Reasons for taking food supplements among adolescents by socio-demographic characteristics

Characteristic	Self awareness					Influences by friends				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	170	13894	17.7	14.51	21.32	18	1484	1.9	0.94	3.75
<b>Locality of School</b>										
Urban	170	13894	17.7	14.51	21.32	18	1484	1.9	0.94	3.75
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	88	8440	19.5	14.92	25.03	12	1160	2.7	1.31	5.38
Girls	82	5453	15.4	12.60	18.74	6	324	0.9	0.26	3.17
<b>Class</b>			0.0	0.00	0.00			0.0	0.00	0.00
Standard 4	29	2691	21.1	15.26	28.40	3	290	2.3	1.08	4.74
Standard 5	24	2045	16.3	9.50	26.46	1	69	0.6	0.07	4.10
Standard 6	22	2679	25.4	15.47	38.72	2	223	2.1	0.26	15.12
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	25	1563	14.3	10.13	19.68	2	138	1.3	0.31	4.95
Form 2	16	1198	15.6	9.51	24.66	4	294	3.8	0.93	14.52
Form 3	18	1230	15.9	10.24	23.97	2	178	2.3	0.54	9.31
Form 4	20	1290	15.4	10.20	22.67	2	96	1.2	0.29	4.40
Form 5	16	1198	14.8	8.14	25.35	2	195	2.4	0.77	7.31
<b>Ethnicity</b>										
Malay	110	9323	19.1	15.30	23.56	11	952	1.9	0.83	4.51
Chinese	41	3181	14.1	8.84	21.77	7	532	2.4	0.87	6.25
Indian	13	895	16.0	8.93	27.04	-	-	-	-	-
Bumiputera Sabah	1	91	12.8	2.69	43.69	-	-	-	-	-
Bumiputera Sarawak	2	129	100.0	100.00	100.00	-	-	-	-	-
Others	3	274	31.6	12.83	59.20	-	-	-	-	-
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd )	17	1554	20.2	10.98	34.17	2	151	2.0	0.45	8.22
Normal (≥ - 2sd - ≤+ 1sd )	96	7618	16.4	12.75	20.83	9	765	1.6	0.75	3.59
Overweight (> +1sd - ≤+ 2sd)	28	375	2.9	0.88	9.14	7	586	4.5	1.92	10.33
Obese (> + 2sd)	29	193	1.7	0.37	7.11	8	584	5.0	2.17	11.20
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd )	9	902	19.5	8.23	39.45	1	104	2.2	0.27	16.15
Normal (≥-2sd )	161	12992	17.5	14.47	21.11	17	1380	1.9	0.92	3.74

**Table 3.6.7: Reasons for taking food supplements among adolescents by socio-demographic characteristics (Cont.)**

Characteristic	Others				
	Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP Kuala Lumpur</b>	40	3299	4.2	2.94	5.93
<b>Locality of School</b>					
Urban	40	3299	4.2	2.94	5.93
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	22	2091	4.8	3.00	7.67
Girls	18	1208	3.4	2.29	5.07
<b>Class</b>			0.0	0.00	0.00
Standard 4	6	653	5.1	2.56	9.96
Standard 5	4	314	2.5	0.98	6.21
Standard 6	3	384	3.6	0.95	12.99
Remove class	-	-	-	-	-
Form 1	4	254	2.3	0.74	6.97
Form 2	6	414	5.4	2.63	10.78
Form 3	9	658	8.5	3.55	19.07
Form 4	5	386	4.6	1.11	17.30
Form 5	3	236	2.9	0.77	10.33
<b>Ethnicity</b>					
Malay	28	2405	4.9	3.52	6.84
Chinese	10	789	3.5	1.27	9.25
Indian	-	-	-	-	-
Bumiputera Sabah	1	46	6.5	0.72	39.88
Bumiputera Sarawak	-	-	-	-	-
Others	1	58	6.7	0.73	41.35
<b>BMI-for age status (BAZ)</b>					
Thinness (<-2sd )	3	370	4.8	0.97	20.67
Normal (≥ - 2sd - ≤+ 1sd )	22	1759	3.8	2.29	6.20
Overweight (> +1sd - ≤+ 2sd)	-	-	-	-	-
Obese (> + 2sd)	-	-	-	-	-
<b>Height-for - age status (HAZ)</b>					
Stunting (<-2sd )	4	406	8.8	3.84	18.75
Normal (≥-2sd )	36	2892	3.9	2.74	5.54

Table 3.6.8: Frequency of taking food supplements among adolescents by socio-demographic characteristics (Cont.)

Characteristic	Everyday					5 to 6 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	209	16309	9.2	6.74	12.38	85	7169	4.0	3.04	5.33
<b>Locality of School</b>										
Urban	209	16309	9.2	6.74	12.38	85	7169	4.0	3.04	5.33
Rural										
<b>Sex</b>										
Boys	102	9417	10.5	7.33	14.85	53	4986	5.6	4.09	7.53
Girls	107	6892	7.8	5.72	10.61	32	2182	2.5	1.49	4.10
<b>Class</b>										
Standard 4	49	4453	19.9	11.90	31.28	13	1358	6.1	3.04	11.70
Standard 5	27	2154	9.9	6.75	14.20	9	693	3.2	1.87	5.33
Standard 6	19	2195	10.3	5.99	17.27	7	777	3.7	1.45	8.91
Remove class										
Form 1	24	1597	6.9	4.28	10.87	19	1503	6.5	3.14	12.85
Form 2	18	1368	6.3	3.28	11.72	10	731	3.4	1.84	6.03
Form 3	27	1858	8.3	5.60	12.13	8	541	2.4	1.25	4.61
Form 4	21	1114	5.0	2.62	9.45	10	832	3.8	1.35	10.02
Form 5	24	1571	6.9	3.55	13.01	9	735	3.2	1.36	7.49
<b>Ethnicity</b>										
Malay	121	9858	9.5	6.34	14.05	51	4417	4.3	3.02	6.00
Chinese	57	4192	7.3	4.89	10.87	25	2129	3.7	2.06	6.64
Indian	23	1635	13.5	8.91	20.03	7	485	4.0	1.75	8.95
Bumiputera Sabah	3	235	18.1	4.07	53.48	1	91	7.0	1.10	33.86
Bumiputera Sarawak	1	46	6.4	0.76	38.02					
Others	5	389	13.3	3.42	40.06					
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	16	1398	10.7	5.92	18.50	8	786	6.0	2.73	12.69
Normal ( $\geq -2sd - \leq +1sd$ )	130	10208	9.6	6.94	13.01	43	3441	3.2	2.11	4.88
Overweight ( $> +1sd - \leq +2sd$ )	29	2300	7.8	4.94	11.97	17	1473	5.0	2.85	8.52
Obese ( $> +2sd$ )	34	2403	8.6	5.29	13.55	17	1469	5.2	3.03	8.87
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	14	1145	10.7	6.54	16.94	4	349	3.2	1.17	8.71
Normal ( $\geq -2sd$ )	195	15164	9.1	6.60	12.36	81	6820	4.1	3.05	5.46

**Table 3.6.8: Frequency of taking food supplements among adolescents by socio-demographic characteristics**

Characteristic	3 to 4 times per week					1 to 2 times per week				
	Count	Estimated population	Prevalence (%)	95% CI		Count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP Kuala Lumpur</b>	175	14138	8.0	6.04	10.40	280	21268	12.0	10.33	13.82
<b>Locality of School</b>										
Urban	175	14138	8.0	6.04	10.40	280	21268	12.0	10.33	13.82
Rural										
<b>Sex</b>										
Boys	81	7750	8.6	6.03	12.26	119	11227	12.5	10.22	15.28
Girls	94	6388	7.2	5.53	9.45	161	10042	11.4	9.54	13.56
<b>Class</b>										
Standard 4	23	2183	9.7	7.22	13.03	31	3077	13.7	9.19	20.02
Standard 5	29	2349	10.8	7.66	14.91	45	3554	16.3	11.58	22.39
Standard 6	19	2511	11.8	6.31	21.09	22	2696	12.7	10.18	15.73
Remove class										
Form 1	24	1645	7.1	4.12	11.92	36	2162	9.3	6.58	13.03
Form 2	17	1277	5.9	3.05	11.00	37	2474	11.4	6.90	18.17
Form 3	23	1451	6.5	4.15	9.97	38	2585	11.5	8.25	15.91
Form 4	19	1298	5.9	4.36	7.86	38	2520	11.4	8.29	15.45
Form 5	21	1424	6.3	3.43	11.15	33	2200	9.7	6.93	13.35
<b>Ethnicity</b>										
Malay	115	9783	9.4	7.07	12.51	168	13062	12.6	10.30	15.35
Chinese	43	3176	5.6	4.39	7.00	89	6683	11.7	10.02	13.61
Indian	12	746	6.2	3.73	10.05	18	1214	10.1	5.79	16.91
Bumiputera Sabah	3	284	21.8	5.68	56.32	2	93	7.1	0.93	38.55
Bumiputera Sarawak						1	82	11.4	1.47	52.70
Others	2	150	5.1	1.01	22.22	2	134	4.6	1.11	17.22
<b>BMI-for age status (BAZ)</b>										
Thinness (<-2sd)	21	1886	14.4	7.96	24.67	30	2532	19.3	14.07	25.99
Normal ( $\geq -2sd - \leq +1sd$ )	105	8328	7.8	5.96	10.13	165	12150	11.4	9.94	12.97
Overweight ( $> +1sd - \leq +2sd$ )	27	2290	7.7	4.59	12.73	40	2991	10.1	6.94	14.45
Obese ( $> +2sd$ )	22	1634	5.8	3.58	9.31	45	3596	12.8	9.33	17.31
<b>Height-for - age status (HAZ)</b>										
Stunting (<-2sd)	11	826	7.7	3.82	14.91	18	1446	13.5	8.03	21.75
Normal ( $\geq -2sd$ )	164	13312	8.0	5.99	10.53	262	19823	11.9	10.09	13.91

### **3.7 Food and nutrition labeling among adolescents (Secondary 1 To Secondary 5) in WP Kuala Lumpur**

**Contributors:** Ruhaya Salleh, Ruzita Abd Talib, Lai Wai Kent, Noor ul-Aziha Muhammad, Mohamad Hasnan Ahmad, Lalitha Palaniveloo, Rashidah Ambak, Hazizi Abu Saad, Shubash Shander a/I Ganapathy

#### **3.7.1 Introduction**

The need to recognise a more effective regulation food packages, the Ministry of Health Malaysia (MOH) gazetted amendments to Food Regulations 1985 in 2003 (MOH, 1985). MOH has also gazetted and enforced Regulations on Nutrition Labelling and Claims. Regulations were introduced requiring manufacturers to describe the nutritional qualities of a food product factually and informatively.

Nutrition information on food labels to assist food choices and implementation of Front-of-Pack (FOP) labelling are listed as current nutrition programs and activities in the National Plan of Action for Nutrition of Malaysia III, 2016-2025. Food and nutrition labelling are designed to provide consumers on various information when choosing food. Food and nutrition labelling in this survey include food labelling, FOP labelling, nutrition information panel (NIP) and nutrition labelling. Food labelling includes any written, printed or graphic matter that is presented on the label, accompanies the food, or is displayed near the food, including that for the purpose of promoting its sale or disposal. NIP declares the nutrients as a table in one section of a food label. In addition, nutrition labelling describes the nutrient content of a food product and this may assist the consumers in making better food choices when planning their daily meals. Thus, food and nutrition labelling has been recognized as one of the strategies to encourage people to adopt healthy eating practices. . There is no national data in Malaysia on prevalence of food label reading among Malaysian children and teenagers. Therefore, this survey was conducted to determine the prevalence of reading and their understanding of food and nutritional labelling among adolescents in Malaysia.

#### **3.7.2 Objective**

##### **3.7.2.1 General objective**

To determine the prevalence of reading food and nutrition labeling among adolescents (Secondary 1 to Secondary 5).

##### **3.7.2.2 Specific objective:**

1. To determine the prevalence of reading food label when buying or receiving food/drink.
2. To determine the reason(s) for not reading food labels.



3. To determine the types of nutrition fact information (energy, carbohydrate/ sugar, fat, protein, sodium, vitamin, mineral and fiber content) that is read from the food label.
4. To determine the types of information (expiry date, nutritional claim, nutrition facts, halal logo, food ingredients, storage instruction) read from the food label.
5. To determine the understanding of nutrition labelling (nutrition facts and front of pack).
6. To determine the knowledge of the most and least amount of ingredients contained based on the food ingredients list.

### **3.7.3 Variable definitions**

There were three classifications used in this study.

- a. Always: reads food labels every time when buying or receiving food/drinks
- b. Sometimes: occasionally or once in a while reads food labels when buying or receiving food/drink
- c. Never: does not read food labels at all.

#### **Food label**

- A food label includes any tag, brand, mark, pictorial or other descriptive matter, written, printed, stenciled, marked, painted, embossed or impressed on, or attached to or included in, belonging to, or accompanying any food. (Malaysia Food Regulations 1985).

#### **Front of Pack (FOP) labels**

- Simplified nutrition information on the front of the package, in varied forms.

#### **Nutrition information panel/ Nutrition facts**

- The nutrition information panel or NIP is a table found in one section of a food label declaring the amount of nutrients contained in the food.

#### **Nutrition labelling**

- A nutrition label is a listing of the level of nutrient(s) as displayed on the food label. It is meant to provide factual information about the nutritional content of the product.

### 3.7.4 Findings

#### 3.7.4.1 Prevalence of practise reading food labels when buying or receiving food/drink among adolescents in WP Kuala Lumpur

The results in **Table 3.7.1** showed 30.7% (95% CI: 26.70, 34.93) of adolescents in WP Kuala Lumpur reported as always reading food labels and only 19.6% (95% CI: 15.75, 24.08) reported as never reading food labels when buying or receiving food. There were no large differences of the prevalence of always reading food labels among girls [30.1% (95% CI: 26.08,34.49)] and boys [31.2% (95% CI: 24.83,38.38)].

#### 3.7.4.2 Reasons for not reading food and nutrition labelling among adolescents in WP Kuala Lumpur

Among those who never read food labels, the findings showed that the main reasons for not reading food labels were that the food labels were not interesting [41.7% (95%CI: 29.90, 54.63)], do not understand food labels [19.6% (95%CI: 15.27,24.86)] and time constraint [16.6%CI: 11.15,23.93]. The results also revealed that 14.4% (95%CI: 9.61,21.03) of adolescents did not know the importance of food labels; 12.7% (95%CI: 7.98,19.59) of adolescents think that the size of the printing on food labels were too small and 12.4% (95%CI: 8.22,18.2) claimed that they were already aware of the food label information Food labels being not interesting was reported as the main reason for not reading food labels by adolescents from both boys and girls and adolescents from all Forms (**Table 3.7.2**).

#### 3.7.4.3 Types of nutrition fact information (energy, carbohydrate/ sugar, fat, protein, sodium, vitamin, mineral and fiber content) that read from the food labels.

Among those who read the nutrition fact information, the three most common types of nutritional information being read were fat content [42.1% (95%CI: 36.15, 48.38)], total energy content [40.5% (95%CI: 37.68, 43.38)] and carbohydrate content (including sugar) [34.4% (95%CI: 30.16, 38.97)].

Energy content [44.5% (95%CI: 39.29,49.79)] was the nutrition fact information most read among boys, while fat content [50.5% (95%CI: 45.08,55.99)] was the highest among girls. Fibre content [9.2% (95%CI: 7.54,11.08)] was the lowest nutrient read among boys and mineral content was the lowest read among girls [10.7% (95%CI: 8.87,12.74 (**Table 3.7.3a** and **Table 3.7.3b**)]

#### 3.7.4.4 Types of information (expiry date, nutrition claim, nutrition facts, halal logo, food ingredients and storage instruction) read from the food labels.

Based on types of information (expiry date, nutritional claim, nutrition facts, halal logo, food ingredients, storage instruction) read on the food label, most of the adolescents read expiry date [81.1% (95%CI: 73.98, 86.57)], followed by halal logo [36.3% (95%CI: 28.77,44.66)], food ingredients [30.4% (95%CI: 25.74, 35.50)], nutrition fact [22.4% (95%CI: 19.48,25.64)],

storage instruction [19.7% (95%CI: 15.51,24.63)] and nutrition claim [18.7% (95%CI: 15.69,22.19)] (**Table 3.7.4**).

#### **3.7.4.5 Understanding of nutrition facts among adolescents in WP Kuala Lumpur**

Overall, 60.1% (95%CI: 55.50,64.49)] of the adolescents had given a correct response to the question assessing interpretation of the energy content based on the nutrition facts given and for sugar content, [55.5% (95%CI: 52.47,58.53)] had given correct based on the nutrition facts given (**Table 3.7.5**).

#### **3.7.4.6 Understanding of front of pack labelling among adolescents in WP Kuala Lumpur**

Overall, less than half of the adolescents [37.7% (95%CI: 33.14,42.39)] had given the correct response to question assessing interpretation of the energy content based on the front of pack labelling given and [43.0% (95%CI: 39.89, 46.20)] had given correct response to question assessing interpretation of the percentage of energy content based on the front of pack labelling given. However, the results showed a low level of correct responses [21.6% (95%CI: 18.81,24.69)] to questions assessing interpretations of both the energy content and the percentage of energy content based on the front of pack labelling given (**Table 3.7.6**).

#### **3.7.4.7 Understanding of the mostly and the least used ingredients based on the food ingredient list among adolescents in WP Kuala Lumpur**

Overall, more than half of the adolescents [55.6% (95%CI: 47.72, 63.11)] had given a correct response to the question assessing interpretation of the mostly used ingredient in the food based on the list of ingredients given. Girls [62.1% (95%CI: 55.60, 68.26)] reported a significantly higher prevalence of interpreting correctly as compared to the boys [48.7% (95%CI: 39.76, 57.69)]. While, 14.0% (95%CI: 11.19 17.38) of adolescents had given correct response to the question assessing interpretation of the least used ingredient in the food based on the list of ingredients given. The results showed a low level of correct response [6.4% (95%CI: 4.79,8.53)] to questions assessing interpretations of both the mostly and the least used ingredients based on the ingredient list given (**Table 3.7.7**).

### **3.7.5 Discussion/Conclusion**

This study provides useful information about the prevalence of reading food and nutrition labelling among adolescents in WP Kuala Lumpur. Adolescents reported a lower prevalence of not reading food label. Continuous education regarding understanding the food and nutrition labelling, not limited to the expiry date, but also the nutritional content and the benefits of front of pack labelling and nutrition information panel is necessary. Boys had a higher prevalence of not reading food and nutrition labelling. Thus, we need to be creative in education and promotion to ensure that adolescents know how to interpret the overall information that is stated at the food and nutrition labelling before choosing packaged food and drinks. In this survey, majority of the adolescents still lack of knowledge to determine the highest and lowest ingredients content based on the label.

## References

1. Institute for Public Health. National health and Morbidity Survey 2014. Malaysian Adult Nutrition Survey. Vol II.
2. Malaysia Food Regulations (1985). Ministry of Health Malaysia.
3. National Coordinating Committee on Food and Nutrition. 2010. Malaysian Dietary Guidelines. Ministry of Health.

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Table 3.7.1: Prevalence of reading food and nutritional labelling when buying or receiving food/drink among adolescents (Cont.)

Characteristic	Yes, always					Yes, sometimes				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	524	34448	30.7	26.70	34.93	868	55894	49.8	47.02	52.48
<b>Locality of School</b>										
Urban	524	34448	30.7	26.70	34.93	868	55894	49.8	47.02	52.48
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	191	17588	31.2	24.83	38.38	286	26615	47.2	44.40	50.06
Girls	333	16860	30.1	26.08	34.49	582	29279	52.3	47.70	56.86
<b>Class</b>										
Form 1	139	9387	40.4	31.78	49.71	148	9395	40.5	33.10	48.27
Form 2	85	6408	29.4	23.09	36.70	161	11048	50.8	40.94	60.53
Form 3	108	6806	30.4	24.46	37.04	177	11515	51.4	44.96	57.81
Form 4	102	6079	27.4	20.74	35.15	187	11149	50.2	44.09	56.25
Form 5	90	5768	25.4	20.05	31.54	195	12787	56.2	47.74	64.39
<b>Ethnicity</b>										
Malay	341	22086	33.9	30.00	38.06	507	32648	50.1	47.19	53.07
Chinese	102	7609	22.0	17.24	27.60	259	17295	50.0	45.09	54.84
Indian	61	3563	38.3	28.40	49.36	76	4329	46.6	36.79	56.65
Bumiputera Sabah	6	388	38.9	18.45	64.21	8	516	51.8	27.14	75.60
Bumiputera Sarawak	3	146	34.3	5.76	81.66	4	280	65.7	18.34	94.24
Others	11	657	34.9	19.94	53.52	14	826	43.8	31.36	57.15
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	31	2172	28.9	19.03	41.21	56	3805	50.6	39.64	61.47
Normal ( $\geq$ -2sd - $\leq$ +1sd)	334	21404	30.8	26.77	35.10	534	34110	49.0	44.69	53.43
Overweight ( $>$ +1sd - $\leq$ +2sd)	88	5891	32.6	26.48	39.48	142	9089	50.4	41.33	59.39
Obese ( $>$ +2sd)	71	4982	29.0	21.28	38.12	135	8845	51.5	45.62	57.26
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	34	2051	34.3	20.20	51.91	46	2624	43.9	31.89	56.71
Normal ( $\geq$ -2sd)	490	32397	30.5	26.32	34.94	822	53269	50.1	47.31	52.85

Table 3.7.1: Prevalence of reading food and nutritional labelling when buying or receiving food/drink among adolescents

Characteristic	Never				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP KUALA LUMPUR</b>	324	21999	19.6	15.75	24.08
<b>Locality of School</b>					
Urban	324	21999	19.6	15.75	24.08
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	130	12156	21.6	15.95	28.50
Girls	194	9843	17.6	14.95	20.56
<b>Class</b>					
Form 1	67	4441	19.1	13.13	27.00
Form 2	58	4309	19.8	14.48	26.46
Form 3	61	4077	18.2	12.76	25.28
Form 4	75	4992	22.5	16.75	29.45
Form 5	63	4181	18.4	12.65	25.95
<b>Ethnicity</b>					
Malay	156	10394	16.0	12.60	20.00
Chinese	136	9710	28.1	22.33	34.59
Indian	24	1401	15.1	10.70	20.83
Bumiputera Sabah	2	93	9.294354	1.59	39.43
Bumiputera Sarawak	-	-	-	-	-
Others	6	401	21.284641	10.03	39.60
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	21	1546	20.6	12.34	32.22
Normal ( $\geq-2sd$ - $\leq+1sd$ )	208	14028	20.2	15.56	25.73
Overweight ( $>+1sd$ - $\leq+2sd$ )	47	3064	17.0	11.67	24.04
Obese ( $>+2sd$ )	48	3362	19.6	14.20	26.32
<b>Height-for-age status (HAZ)</b>					
Stunting ( <-2sd )	23	1300	21.8	14.53	31.25
Normal ( $\geq-2sd$ )	301	20700	19.5	15.50	24.15

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Table 3.7.2: Reasons for not reading food label among adolescents (Cont.)

Characteristic	Size of the print too small					Do not understand				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	42	2793	12.7	7.98	19.59	65	4318	19.6	15.27	24.86
<b>Locality of School</b>										
Urban	42	2793	12.7	7.98	19.59	65	4318	19.6	15.27	24.86
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	15	1426	11.7	5.54	23.14	24	2234	18.4	12.95	25.41
Girls	27	1367	13.9	9.74	19.41	41	2084	21.2	14.97	29.06
<b>Class</b>										
Form 1	12	676	15.2	6.34	32.24	22	1398	31.5	20.98	44.30
Form 2	7	513	11.9	5.19	24.99	12	864	20.1	9.12	38.55
Form 3	9	590	14.5	7.90	25.05	8	477	11.7	6.15	21.13
Form 4	6	420	8.4	3.11	20.83	18	1228	24.6	13.23	41.13
Form 5	8	594	14.2	5.79	30.85	5	350	8.4	4.17	16.13
<b>Ethnicity</b>										
Malay	31	2201	21.2	15.70	27.93	33	1936	18.6	12.47	26.89
Chinese	7	351	3.6	1.52	8.36	31	2282	23.5	18.25	29.73
Indian	3	191	13.6	3.51	40.69	-	-	-	-	-
Bumiputera Sabah	1	50	53.8	4.67	96.52	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	1	99	24.8	2.54	80.66
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	6	420	27.2	11.54	51.59	4	264	17.1	5.33	42.90
Normal (≥-2sd - ≤+1sd)	21	1344	9.6	5.60	15.92	43	2901	20.7	15.41	27.17
Overweight (>+1sd - ≤+2sd)	7	437	14.3	6.69	27.86	4	238	7.8	3.26	17.33
Obese (>+2sd)	8	592	17.6	7.33	36.62	14	916	27.3	13.87	46.58
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	5	304	23.4	9.08	48.24	5	242	18.6	8.32	36.52
Normal (≥-2sd)	37	2489	12.0	7.28	19.22	60	4076	19.7	14.85	25.64

Table 3.7.2: Reasons for not reading food label among adolescents (Cont.)

Characteristic	Not interesting					Do not know the importance of food label				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	136	9184	41.7	29.90	54.63	48	3168	14.4	9.61	21.03
<b>Locality of School</b>										
Urban	136	9184	41.7	29.90	54.63	48	3168	14.4	9.61	21.03
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	51	4912	40.4	22.59	61.17	17	1598	13.1	7.44	22.19
Girls	85	4272	43.4	34.39	52.88	31	1569	15.9	11.37	21.89
<b>Class</b>										
Form 1	18	1347	30.3	15.81	50.23	12	825	18.6	9.89	32.16
Form 2	22	1567	36.4	23.18	51.96	5	271	6.3	1.90	18.84
Form 3	23	1534	37.6	22.41	55.75	8	500	12.3	5.53	24.99
Form 4	38	2439	48.9	37.90	59.93	11	717	14.4	7.14	26.80
Form 5	35	2298	55.0	36.01	72.57	12	855	20.4	10.55	35.88
<b>Ethnicity</b>										
Malay	48	2785	26.8	20.01	34.88	13	782	7.5	3.85	14.18
Chinese	81	6008	61.9	51.28	71.45	24	1668	17.2	9.32	29.51
Indian	5	288	20.5	7.91	43.72	9	559	39.9	26.61	54.89
Bumiputera Sabah	-	-	-	-	-	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	2	103	25.8	4.21	73.27	2	158	39.3	9.93	79.18
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	8	605	39.1	17.52	66.00	4	353	22.8	6.38	56.27
Normal (≥-2sd - ≤+1sd)	93	6181	44.1	31.64	57.28	30	1825	13.0	8.06	20.32
Overweight (>+1sd - ≤+2sd)	21	1457	47.5	33.48	62.02	7	443	14.4	5.77	31.77
Obese (>+2sd)	14	942	28.0	11.77	53.15	7	547	16.3	7.06	33.19
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	9	477	36.7	19.66	57.93	6	334	25.7	9.83	52.30
Normal (≥-2sd)	127	8707	42.1	30.11	55.02	42	2834	13.7	8.73	20.83



Table 3.7.2: Reasons for not reading food label among adolescents

Characteristic	Time constraint					Already aware of the food label information				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	52	3647	16.6	11.15	23.93	38	2727	12.4	8.22	18.27
<b>Locality of School</b>										
Urban	52	3647	16.6	11.15	23.93	38	2727	12.4	8.22	18.27
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	25	2283	18.8	11.31	29.55	20	1786	14.7	7.95	25.56
Girls	27	1364	13.9	8.26	22.33	18	941	9.6	6.79	13.30
<b>Class</b>										
Form 1	8	587	13.2	5.54	28.29	9	625	14.1	5.30	32.40
Form 2	10	802	18.6	8.94	34.76	9	675	15.7	6.61	32.78
Form 3	12	788	19.3	8.59	37.92	10	735	18.0	8.17	35.19
Form 4	15	1097	22.0	13.13	34.40	4	287	5.7	2.11	14.70
Form 5	7	374	9.0	2.92	24.35	6	406	9.7	5.18	17.43
<b>Ethnicity</b>										
Malay	36	2526	24.3	17.33	32.96	15	1187	11.4	5.24	23.11
Chinese	10	733	7.5	2.80	18.79	16	1103	11.4	7.34	17.17
Indian	3	189	13.5	2.32	50.55	6	354	25.3	11.47	46.84
Bumiputera Sabah	1	43	46.2	3.48	95.33	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	2	157	39.0	9.81	79.03	1	83	20.7	2.01	76.74
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	2	191	12.3	3.21	37.35	2	126	8.2	1.72	31.17
Normal (≥-2sd - ≤+1sd)	36	2607	18.6	11.45	28.71	23	1613	11.5	7.26	17.73
Overweight (>+1sd - ≤+2sd)	8	445	14.5	6.75	28.53	6	410	13.4	5.27	30.09
Obese (>+2sd)	6	405	12.0	5.72	23.62	7	578	17.2	8.20	32.52
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	1	76	5.9	0.73	34.57	1	46	3.6	0.34	28.91
Normal (≥-2sd)	51	3571	17.3	11.63	24.83	37	2681	12.9	8.70	18.84

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Table 3.7.3a: Prevalence of reading nutrition information (macronutrient) among those who read food label (Yes, always/ Yes, sometimes) (Cont)

Characteristic	Yes, always/ Yes, sometimes									
	Total energy					Carbohydrate				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP KUALA LUMPUR</b>	547	36585	40.5	37.68	43.38	497	31104	34.4	30.16	38.97
<b>Locality of School</b>										
Urban	547	36585	40.5	37.68	43.38	497	31104	34.4	30.16	38.97
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	212	19662	44.5	39.29	49.79	139	13035	29.5	23.79	35.92
Girls	335	16923	36.7	34.48	38.94	358	18068	39.2	35.63	42.81
<b>Class</b>										
Form 1	100	6996	37.2	28.34	47.11	93	6132	32.6	28.22	37.41
Form 2	107	7577	43.4	37.06	49.98	92	6280	36.0	28.47	44.24
Form 3	105	7114	38.8	32.15	45.95	102	6040	33.0	24.10	43.24
Form 4	104	6328	36.7	30.31	43.65	104	5829	33.8	26.00	42.67
Form 5	131	8571	46.2	39.53	52.99	106	6821	36.8	25.80	49.29
<b>Ethnicity</b>										
Malay	337	22452	41.0	38.30	43.80	311	19304	35.3	29.01	42.07
Chinese	138	9794	39.3	32.99	46.04	125	8419	33.8	26.48	42.00
Indian	51	3041	38.5	28.65	49.47	49	2747	34.8	25.20	45.85
Bumiputera Sabah	5	384	42.5	9.03	84.65	4	202	22.3	6.38	54.81
Bumiputera Sarawak	3	190	44.6	11.05	83.88	2	137	32.3	6.31	77.13
Others	13	724	48.8	30.12	67.86	6	294	19.8	6.15	48.30
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	34	2409	40.3	30.31	51.18	27	1806	30.2	15.46	50.64
Normal (≥-2sd - ≤+1sd)	348	23254	41.9	37.35	46.57	313	19619	35.3	30.74	40.23
Overweight (>+1sd - ≤+2sd)	88	5673	37.9	31.92	44.20	83	4994	33.3	27.12	40.19
Obese (>+2sd)	77	5249	38.0	30.73	45.78	74	4685	33.9	21.70	48.66
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	36	2222	47.5	38.86	56.34	30	1721	36.8	23.97	51.84
Normal (≥-2sd)	511	34363	40.1	37.11	43.19	467	29383	34.3	29.89	39.00

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Table 3.7.3a: Prevalence of reading nutrition information (macronutrient) among those who read food label (Yes, always/ Yes, sometimes)

Characteristic	Yes, always/ Yes, sometimes									
	Fat					Protein				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
			Lower	Upper				Lower	Upper	
<b>WP KUALA LUMPUR</b>	621	38075	42.1	36.15	48.38	322	21832	24.2	21.71	26.81
<b>Locality of School</b>										
Urban	621	38075	42.1	36.15	48.38	322	21832	24.2	21.71	26.81
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	157	14757	33.4	27.67	39.64	128	11938	27.0	23.31	31.05
Girls	464	23318	50.5	45.08	55.99	194	9894	21.4	18.28	24.99
<b>Class</b>										
Form 1	121	7872	41.9	34.13	50.12	79	5297	28.2	23.08	33.96
Form 2	113	7707	44.1	34.29	54.50	56	4022	23.0	15.54	32.76
Form 3	116	6907	37.7	30.02	46.05	57	3766	20.6	13.88	29.36
Form 4	130	6938	40.3	30.59	50.78	65	4084	23.7	18.98	29.17
Form 5	141	8651	46.6	36.20	57.35	65	4664	25.1	18.39	33.34
<b>Ethnicity</b>										
Malay	374	22893	41.8	34.44	49.59	195	12997	23.7	19.82	28.18
Chinese	168	10852	43.6	35.34	52.18	82	5986	24.0	18.80	30.19
Indian	59	3202	40.6	31.61	50.20	36	2260	28.6	17.67	42.87
Bumiputera Sabah	4	232	25.6	7.40	59.80	2	147	16.3	2.69	57.95
Bumiputera Sarawak	6	372	87.5	35.73	98.88	3	191	44.8	11.13	84.02
Others	10	525	35.4	13.42	65.92	4	251	17.0	6.09	39.11
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	29	1843	30.8	24.85	37.54	27	1828	30.6	19.55	44.41
Normal (≥-2sd - ≤+1sd)	379	22749	41.0	34.83	47.43	199	13309	24.0	21.45	26.69
Overweight (>+1sd - ≤+2sd)	111	6764	45.2	35.95	54.71	61	4200	28.0	22.11	34.85
Obese (>+2sd)	101	6674	48.3	40.42	56.20	35	2495	18.0	12.10	26.04
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	35	2015	43.1	33.13	53.65	16	1007	21.5	12.84	33.81
Normal (≥-2sd)	586	36060	42.1	35.64	48.83	306	20826	24.3	21.47	27.40

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Table 3.7.3b: Prevalence of reading nutrition information (micronutrient/fiber) among those who read food label (Yes, always/ Yes, sometimes) (Cont)

Characteristic	Yes, always/ Yes, sometimes									
	Sodium					Vitamin				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	144	9341	10.3	8.58	12.41	309	19492	21.6	19.33	24.01
<b>Locality of School</b>										
Urban	144	9341	10.3	8.58	12.41	309	19492	21.6	19.33	24.01
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	44	4179	9.5	6.85	12.91	89	8253	18.7	17.37	20.05
Girls	100	5161	11.2	9.25	13.47	220	11239	24.4	20.72	28.40
<b>Class</b>										
Form 1	41	2683	14.3	9.80	20.36	83	5419	28.8	23.83	34.45
Form 2	22	1426	8.2	4.88	13.36	53	3492	20.0	14.82	26.44
Form 3	29	1777	9.7	6.39	14.46	58	3569	19.5	13.49	27.29
Form 4	17	1033	6.0	3.08	11.36	57	3394	19.7	15.11	25.28
Form 5	35	2422	13.1	8.32	19.90	58	3618	19.5	13.72	26.96
<b>Ethnicity</b>										
Malay	93	5687	10.4	8.11	13.23	184	11499	21.0	17.95	24.43
Chinese	33	2534	10.2	6.14	16.38	81	5470	22.0	16.26	28.97
Indian	14	867	11.0	6.48	18.05	34	1905	24.1	18.68	30.60
Bumiputera Sabah	2	109	12.1	2.23	45.24	3	150	16.6	3.83	50.02
Bumiputera Sarawak	1	91	21.4	2.08	77.70	3	184	43.2	8.19	86.61
Others	1	52	3.5	0.32	29.42	4	284	19.1	7.04	42.53
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	10	716	12.0	7.51	18.55	19	1263	21.1	14.68	29.45
Normal (≥-2sd - ≤+1sd)	88	5571	10.0	7.77	12.87	196	12078	21.8	18.50	25.41
Overweight (>+1sd - ≤+2sd)	19	1129	7.5	5.12	10.97	48	2990	20.0	14.08	27.51
Obese (>+2sd)	27	1925	13.9	10.09	18.91	46	3160	22.9	17.77	28.89
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	8	515	11.0	4.70	23.71	15	873	18.7	10.25	31.55
Normal (≥-2sd)	136	8825	10.3	8.50	12.44	294	18619	21.7	19.45	24.21

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Table 3.7.3b: Prevalence of reading nutrition information (micronutrient/fiber) among those who read food label (Yes, always/ Yes, sometimes)

Characteristic	Yes, always/ Yes, sometimes									
	Mineral					Fiber				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	141	9142	10.1	8.31	12.26	152	9524	10.5	9.04	12.26
<b>Locality of School</b>										
Urban	141	9142	10.1	8.31	12.26	152	9524	10.5	9.04	12.26
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	45	4225	9.6	7.25	12.51	44	4047	9.2	7.54	11.08
Girls	96	4917	10.7	8.87	12.74	108	5477	11.9	9.97	14.08
<b>Class</b>										
Form 1	41	2751	14.6	10.95	19.32	38	2548	13.6	9.32	19.33
Form 2	26	1741	10.0	6.55	14.90	26	1647	9.4	5.66	15.33
Form 3	26	1633	8.9	6.15	12.76	30	1878	10.3	6.76	15.24
Form 4	21	1223	7.1	4.25	11.61	28	1663	9.7	6.55	14.01
Form 5	27	1794	9.7	5.81	15.66	30	1788	9.6	5.48	16.40
<b>Ethnicity</b>										
Malay	91	5747	10.5	8.32	13.16	92	5740	10.5	8.63	12.69
Chinese	31	2235	9.0	5.17	15.12	43	2838	11.4	9.10	14.18
Indian	15	881	11.2	5.56	21.16	15	837	10.6	5.69	18.91
Bumiputera Sabah	2	112	12.4	2.28	45.92	-	-	-	-	-
Bumiputera Sarawak	1	91	21.4	2.08	77.70	-	-	-	-	-
Others	1	76	5.1	0.47	38.38	2	109	7.3	2.74	18.12
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	7	420	7.0	3.24	14.59	2	153	2.6	0.55	11.15
Normal (≥-2sd - ≤+1sd)	94	6082	11.0	8.59	13.87	99	6206	11.2	9.28	13.41
Overweight (>+1sd - ≤+2sd)	18	1107	7.4	4.26	12.51	17	879	5.9	3.27	10.33
Obese (>+2sd)	22	1533	11.1	7.35	16.39	34	2285	16.5	11.38	23.40
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	7	436	9.3	3.57	22.18	4	230	4.9	1.87	12.39
Normal (≥-2sd)	134	8706	10.2	8.27	12.43	148	9294	10.8	9.25	12.69

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Table 3.7.4: Prevalence of reading food label among those who read food label (Yes, always/ Yes, sometimes) (Cont.)

Characteristic	Expiry date					Nutritional claim				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	1137	73235	81.1	73.982	86.569	262	16917	18.7	15.692	22.192
<b>Locality of School</b>										
Urban	1137	73235	81.1	73.982	86.569	262	16917	18.7	15.692	22.192
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	381	35125	79.5	67.529	87.803	86	8064	18.2	14.979	22.036
Girls	756	38110	82.6	79.083	85.63	176	8853	19.2	15.188	23.943
<b>Class</b>										
Form 1	231	15311	81.5	75.612	86.249	58	3843	20.5	14.361	28.291
Form 2	193	13365	76.6	65.87	84.686	45	3307	18.9	13.786	25.468
Form 3	237	15238	83.2	75.328	88.896	45	2827	15.4	10.416	22.264
Form 4	234	13972	81.1	72.186	87.641	49	2810	16.3	12.487	21.026
Form 5	242	15350	82.7	65.489	92.359	65	4130	22.3	16.269	29.67
<b>Ethnicity</b>										
Malay	669	42482	77.6	68.246	84.834	129	8447	15.4	12.575	18.801
Chinese	315	21765	87.4	83.62	90.4	94	6036	24.2	18.105	31.642
Indian	116	6716	85.1	77.726	90.34	31	1911	24.2	16.99	33.279
Bumiputera Sabah	8	523	57.9	37.256	76.109	3	235	26.1	9.4813	54.241
Bumiputera Sarawak	6	373	87.7	36.216	98.898	-	-	-	-	-
Others	23	1376	92.7	73.678	98.316	5	288	19.4	7.9734	40.146
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	75	5219	87.3	75.077	94.031	15	927	15.5	10.202	22.892
Normal (≥-2sd - ≤+1sd)	719	45637	82.2	74.076	88.197	168	10585	19.1	15.17	23.686
Overweight (>+1sd - ≤+2sd)	182	11664	77.9	71.068	83.446	38	2585	17.3	12.361	23.572
Obese (>+2sd)	161	10714	77.5	69.682	83.75	41	2820	20.4	14.904	27.261
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	64	3718	79.5	69.901	86.66	7	342	7.3	3.0603	16.515
Normal (≥-2sd)	1073	69517	81.1	73.9	86.744	255	16575	19.3	16.258	22.865

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Table 3.7.4: Prevalence of reading food label among those who read food label (Yes, always/ Yes, sometimes) (Cont.)

Characteristic	Nutrition fact					Halal logo				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	327	20247	22.4	19.48	25.644	525	32834	36.3	28.774	44.656
<b>Locality of School</b>										
Urban	327	20247	22.4	19.48	25.644	525	32834	36.3	28.774	44.656
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	88	8237	18.6	16.032	21.548	155	14144	32.0	24.38	40.713
Girls	239	12010	26.0	22.561	29.829	370	18690	40.5	31.452	50.259
<b>Class</b>										
Form 1	74	4731	25.2	21.569	29.194	122	7965	42.4	32.597	52.854
Form 2	56	3762	21.6	17.38	26.404	127	8381	48.0	31.688	64.776
Form 3	59	3547	19.4	13.86	26.371	96	5938	32.4	24.538	41.426
Form 4	59	3466	20.1	14.97	26.491	94	5365	31.1	21.576	42.64
Form 5	79	4741	25.5	18.128	34.719	86	5184	27.9	16.38	43.42
<b>Ethnicity</b>										
Malay	176	10904	19.9	16.826	23.426	454	28355	51.8	42.045	61.431
Chinese	105	6747	27.1	21.028	34.143	22	1520	6.1	3.2835	11.073
Indian	36	2049	26.0	16.616	38.166	31	1873	23.7	16.991	32.123
Bumiputera Sabah	3	194	21.5	4.9352	59.173	6	334	37.0	11.085	73.458
Bumiputera Sarawak	1	46	10.9	1.2861	53.368	1	91	21.4	2.0843	77.697
Others	6	307	20.7	8.9315	40.972	11	659	44.4	26.616	63.827
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	20	1358	22.7	15.244	32.457	32	2127	35.6	27.189	44.965
Normal (≥-2sd - ≤+1sd)	196	12005	21.6	18.376	25.269	312	19147	34.5	25.688	44.503
Overweight (>+1sd - ≤+2sd)	51	2959	19.8	14.406	26.466	83	5187	34.6	27.601	42.395
Obese (>+2sd)	60	3926	28.4	22.451	35.195	97	6328	45.8	36.141	55.716
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	16	944	20.2	11.367	33.27	28	1627	34.8	23.66	47.892
Normal (≥-2sd)	311	19303	22.5	19.266	26.174	497	31207	36.4	28.822	44.779

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Table 3.7.4: Prevalence of reading food label among those who read food label (Yes, always/ Yes, sometimes)

Characteristic	Food ingredients					Storage instruction				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	444	27465	30.4	25.738	35.504	284	17775	19.7	15.511	24.632
<b>Locality of School</b>										
Urban	444	27465	30.4	25.738	35.504	284	17775	19.7	15.511	24.632
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	122	11220	25.4	21.418	29.805	77	7311	16.5	11.36	23.457
Girls	322	16244	35.2	30.044	40.741	207	10464	22.7	19.59	26.098
<b>Class</b>										
Form 1	92	5940	31.6	26.00	37.845	61	3967	21.1	15.821	27.613
Form 2	73	4930	28.2	21.929	35.545	50	3209	18.4	12.64	25.967
Form 3	91	5617	30.7	22.746	39.908	46	2835	15.5	10.586	22.061
Form 4	93	5178	30.1	23.373	37.708	58	3263	18.9	13.499	25.917
Form 5	95	5799	31.3	22.463	41.638	69	4501	24.3	14.9	36.941
<b>Ethnicity</b>										
Malay	259	16015	29.3	23.442	35.845	153	9450	17.3	12.894	22.732
Chinese	113	7510	30.2	24.131	36.947	97	6438	25.9	17.71	36.093
Indian	55	2961	37.5	27.852	48.296	27	1464	18.5	12.219	27.146
Bumiputera Sabah	4	233	25.8	7.443	60.088	1	58	6.4	0.6717	40.774
Bumiputera Sarawak	2	143	33.7	5.6276	81.238	1	91	21.4	2.0843	77.697
Others	11	603	40.6	20.815	64.037	5	275	18.5	6.0706	44.404
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	23	1449	24.3	13.711	39.212	13	809	13.5	6.919	24.795
Normal (≥-2sd - ≤+1sd)	284	17406	31.4	26.486	36.671	193	12156	21.9	17.868	26.541
Overweight (>+1sd - ≤+2sd)	67	4139	27.6	22.549	33.37	31	1928	12.9	7.8242	20.455
Obese (>+2sd)	70	4470	32.3	23.019	43.284	47	2882	20.8	14.826	28.486
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	31	1932	41.3	27.723	56.375	15	903	19.3	9.4092	35.57
Normal (≥-2sd)	413	25533	29.8	24.873	35.256	269	16872	19.7	15.507	24.683



Table 3.7.5: Prevalence of understanding on the interpretation calorie and sugar content on the nutrition labelling among adolescents (Cont.)

Characteristic	Both Correct					Interpretation calorie correct				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	765	50120	44.6	40.48	48.78	1028	67529	60.1	55.50	64.49
<b>Locality of School</b>										
Urban	765	50120	44.6	40.48	48.78	1028	67529	60.1	55.50	64.49
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	282	26055	46.2	40.23	52.35	381	35132	62.3	55.47	68.74
Girls	483	24065	42.9	39.32	46.66	647	32397	57.8	53.66	61.87
<b>Class</b>										
Form 1	136	9376	40.4	34.49	46.55	206	14030	60.4	52.87	67.49
Form 2	127	8834	40.5	32.11	49.47	178	12644	58.0	49.40	66.07
Form 3	155	10198	45.5	39.08	52.14	201	13214	59.0	52.10	65.56
Form 4	174	10143	45.6	35.92	55.72	227	13267	59.7	48.80	69.73
Form 5	173	11570	50.9	40.67	61.04	216	14374	63.2	53.15	72.27
<b>Ethnicity</b>										
Malay	457	29457	45.2	40.19	50.30	617	39916	61.2	55.45	66.73
Chinese	226	15828	45.7	38.43	53.21	290	20362	58.8	51.02	66.21
Indian	60	3483	37.5	30.71	44.79	87	5162	55.5	46.97	63.81
Bumiputera Sabah	9	641	64.4	30.08	88.34	11	740	74.3	41.00	92.36
Bumiputera Sarawak	1	46	10.9	1.29	53.37	2	100	23.4	4.65	65.64
Others	12	665	35.3	23.87	48.69	21	1249	66.3	53.23	77.25
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	44	3119	41.5	29.85	54.11	64	4478	59.5	45.17	72.40
Normal ( $\geq -2sd$ - $\leq +1sd$ )	496	32071	46.1	42.29	49.92	654	42329	60.8	55.94	65.50
Overweight ( $>+1sd$ - $\leq +2sd$ )	125	8307	46.0	39.07	53.16	167	10985	60.9	53.91	67.43
Obese ( $>+2sd$ )	100	6623	38.5	30.80	46.89	143	9738	56.7	49.54	63.50
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	48	2759	46.2	34.68	58.09	68	3961	66.3	59.27	72.66
Normal ( $\geq -2sd$ )	717	47362	44.5	40.29	48.81	960	63568	59.7	54.88	64.40

Table 3.7.5: Prevalence of understanding on the interpretation calorie and sugar content on the nutrition labelling among adolescents (Cont.)

Characteristic	Interpretation of sugar correct				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP KUALA LUMPUR</b>	945	62400	55.5	52.47	58.53
<b>Locality of School</b>					
Urban	945	62400	55.5	52.47	58.53
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	354	32831	58.3	53.96	62.43
Girls	591	29569	52.8	49.54	55.98
<b>Class</b>					
Form 1	178	12160	52.4	46.05	58.59
Form 2	155	11015	50.5	43.68	57.29
Form 3	185	12116	54.1	47.15	60.89
Form 4	217	13001	58.5	53.83	63.04
Form 5	210	14109	62.1	53.68	69.77
<b>Ethnicity</b>					
Malay	559	36744	56.4	53.07	59.62
Chinese	275	19223	55.5	49.16	61.73
Indian	85	4842	52.1	43.25	60.82
Bumiputera Sabah	10	691	69.4	34.87	90.54
Bumiputera Sarawak	3	184	43.2	8.19	86.61
Others	13	717	38.1	26.65	50.95
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	60	4248	56.5	45.87	66.50
Normal (≥-2sd - ≤+1sd)	598	38940	56.0	51.57	60.25
Overweight (>+1sd - ≤+2sd)	163	10968	60.8	51.62	69.26
Obese (>+2sd)	124	8244	48.0	40.47	55.54
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	57	3288	55.0	42.51	66.93
Normal (≥-2sd)	888	59113	55.5	52.27	58.77

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Table 3.7.6: Prevalence of understanding on correct interpretation of front of pack labelling for energy among adolescents (Cont.)

Characteristic	Both correct					Know only the energy content				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	368	24283	21.6	18.81	24.69	636	42320	37.7	33.14	42.39
<b>Locality of School</b>										
Urban	368	24283	21.6	18.81	24.69	636	42320	37.7	33.14	42.39
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	135	12784	22.7	18.67	27.27	238	22471	39.9	33.39	46.73
Girls	233	11499	20.5	17.01	24.54	398	19849	35.4	31.21	39.88
<b>Class</b>										
Form 1	66	4304	18.5	13.47	24.96	123	8103	34.9	28.43	41.95
Form 2	57	4359	20.0	14.83	26.36	104	8047	36.9	28.27	46.44
Form 3	67	4268	19.1	13.42	26.33	106	6843	30.6	23.45	38.72
Form 4	92	5446	24.5	19.14	30.82	148	8923	40.2	33.26	47.47
Form 5	86	5906	26.0	21.96	30.44	155	10404	45.8	37.81	53.94
<b>Ethnicity</b>										
Malay	196	12632	19.4	16.28	22.91	326	21493	33.0	29.03	37.17
Chinese	127	8937	25.8	22.24	29.76	223	15707	45.4	36.90	54.13
Indian	34	2037	21.9	16.21	28.94	70	4111	44.2	33.06	56.03
Bumiputera Sabah	2	137	13.8	4.57	34.84	4	275	27.6	11.69	52.31
Bumiputera Sarawak	1	46	10.9	1.29	53.37	2	93	21.8	2.13	78.07
Others	8	494	26.2	12.98	45.76	11	642	34.1	17.64	55.49
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	23	1628	21.6	13.26	33.31	34	2442	32.5	22.86	43.80
Normal (≥-2sd - ≤+1sd)	235	15227	21.9	19.16	24.86	402	26381	37.9	32.60	43.52
Overweight (>+1sd - ≤+2sd)	63	4317	23.9	16.37	33.58	117	8046	44.6	34.84	54.78
Obese (>+2sd)	47	3110	18.1	14.02	23.03	83	5451	31.7	28.01	35.66
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	16	930	15.6	10.97	21.60	34	1980	33.1	24.19	43.52
Normal (≥-2sd)	352	23353	21.9	19.12	25.05	602	40339	37.9	33.42	42.61

**Table 3.7.6: Prevalence of understanding on correct interpretation of front of pack labelling for energy among adolescents**

Characteristic	Know only the percentage of contribution by serving of foods				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
<b>WP KUALA LUMPUR</b>	734	48344	43.0	39.89	46.20
<b>Locality of School</b>					
Urban	734	48344	43.0	39.89	46.20
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	272	25197	44.7	40.45	49.05
Girls	462	23147	41.3	37.78	44.93
<b>Class</b>					
Form 1	154	10212	44.0	35.84	52.45
Form 2	124	8829	40.5	34.56	46.67
Form 3	139	9077	40.5	33.87	47.55
Form 4	168	10133	45.6	39.45	51.88
Form 5	149	10094	44.4	37.81	51.19
<b>Ethnicity</b>					
Malay	458	29908	45.9	41.92	49.90
Chinese	188	13185	38.1	35.56	40.70
Indian	63	3783	40.7	35.18	46.47
Bumiputera Sabah	8	509	51.1	26.43	75.19
Bumiputera Sarawak	2	99	23.2	4.61	65.30
Others	15	861	45.7	26.37	66.36
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	47	3430	45.6	32.22	59.64
Normal (≥-2sd - ≤+1sd)	458	29619	42.6	40.15	45.01
Overweight (>+1sd - ≤+2sd)	128	8375	46.4	39.28	53.70
Obese (>+2sd)	101	6921	40.3	34.03	46.82
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	41	2328	39.0	33.27	44.97
Normal (≥-2sd)	693	46016	43.2	40.06	46.48

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Table 3.7.7: Prevalence on the understanding of food ingredients among adolescents (Cont.)

Characteristic	Both Correct					Know only the highest ingredient				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI		Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper				Lower	Upper
<b>WP KUALA LUMPUR</b>	89	5793	6.4	4.79	8.53	804	50187	55.6	47.72	63.11
<b>Locality of School</b>										
Urban	89	5793	6.4	4.79	8.53	804	50187	55.6	47.72	63.11
Rural	-	-	-	-	-	-	-	-	-	-
<b>Sex</b>										
Boys	31	2880	6.5	3.83	10.87	233	21519	48.7	39.76	57.69
Girls	58	2913	6.3	5.01	7.93	571	28668	62.1	55.60	68.26
<b>Class</b>										
Form 1	12	831	4.4	2.31	8.30	162	10524	56.0	44.69	66.78
Form 2	18	1339	7.7	3.46	16.16	144	9569	54.8	46.41	62.95
Form 3	21	1378	7.5	4.62	12.02	153	9692	52.9	42.43	63.12
Form 4	18	1045	6.1	3.46	10.43	164	9307	54.0	44.87	62.92
Form 5	20	1200	6.5	3.56	11.47	181	11095	59.8	44.13	73.69
<b>Ethnicity</b>										
Malay	37	2405	4.4	2.77	6.91	463	28302	51.7	42.15	61.14
Chinese	39	2679	10.8	7.47	15.25	226	15367	61.7	56.48	66.67
Indian	9	464	5.9	3.23	10.48	91	5117	64.8	53.62	74.64
Bumiputera Sabah	-	-	-	-	-	7	428	47.4	15.25	81.85
Bumiputera Sarawak	-	-	-	-	-	3	184	43.2	8.19	86.61
Others	4	245	16.5	4.56	45.00	14	789	53.2	37.90	67.90
<b>BMI-for-age status (BAZ)</b>										
Thinness (<-2sd)	5	459	7.7	3.83	14.81	56	3805	63.7	54.88	71.62
Normal (≥-2sd - ≤+1sd)	57	3543	6.4	4.68	8.65	495	30229	54.5	45.79	62.85
Overweight (>+1sd - ≤+2sd)	13	847	5.7	3.09	10.12	141	9069	60.5	51.64	68.80
Obese (>+2sd)	14	944	6.8	3.66	12.37	111	7039	50.9	42.57	59.19
<b>Height-for-age status (HAZ)</b>										
Stunting (<-2sd)	4	175	3.7	1.44	9.38	46	2583	55.2	40.62	69.00
Normal (≥-2sd)	85	5618	6.6	4.89	8.75	758	47604	55.6	47.72	63.15

Table 3.7.7: Prevalence on the understanding of food ingredients among adolescents in WP Kuala Lumpur

Characteristic	Know only the lowest ingredient				
	Unweighted	Estimated	Prevalence	95% CI	
	Count	Population	(%)	Lower	Upper
<b>WP KUALA LUMPUR</b>	186	12649	14.0	11.19	17.38
<b>Locality of School</b>					
Urban	186	12649	14.0	11.19	17.38
Rural	-	-	-	-	-
<b>Sex</b>					
Boys	77	7115	16.1	12.12	21.06
Girls	109	5534	12.0	9.54	14.97
<b>Class</b>					
Form 1	29	2135	11.4	6.96	18.02
Form 2	34	2400	13.7	8.01	22.60
Form 3	47	3062	16.7	12.51	21.97
Form 4	34	2077	12.1	8.93	16.08
Form 5	42	2976	16.0	9.63	25.51
<b>Ethnicity</b>					
Malay	105	7177	13.1	10.39	16.42
Chinese	55	3832	15.4	11.12	20.92
Indian	18	1101	13.9	6.89	26.20
Bumiputera Sabah	3	235	26.1	6.22	65.19
Bumiputera Sarawak	-	-	-	-	-
Others	5	303	20.4	4.99	55.66
<b>BMI-for-age status (BAZ)</b>					
Thinness (<-2sd)	6	512	8.6	4.41	15.96
Normal (≥-2sd - ≤+1sd)	117	7701	13.9	10.90	17.50
Overweight (>+1sd - ≤+2sd)	31	2074	13.8	8.90	20.92
Obese (>+2sd)	32	2361	17.1	10.11	27.39
<b>Height-for-age status (HAZ)</b>					
Stunting (<-2sd)	11	641	13.7	8.32	21.77
Normal (≥-2sd)	175	12008	14.0	11.23	17.36

## APPENDICES

### Appendix 1: Members of Steering Committee NHMS 2015-2018

1. Director General of Health
2. Deputy Director General of Health (Public Health)
3. Deputy Director General of Health (Medical)
4. Deputy Director General of Health (Research & Tech Support)
5. Director, Oral Health Division
6. Director, Pharmaceutical Services Division
7. Director, Food Safety and Quality Programmed Division
8. Director, Medical Development Division
9. Director, Planning Division
10. Director, Health Education Division
11. Director, Disease Control Division
12. Director, Family Health Development Division
13. Director, Nutrition Division
14. Representative of State Directors
15. Director, Institute for Public Health
16. Dean Faculty of Medicine, University of Malaya
17. Dean Faculty of Medicine, National University of Malaysia
18. Principle Investigator, NHMS

**Appendix 2: Term of Reference for NHMS 2015-2018 Steering Committee**

1. To approve the objectives and scopes of NHMS 2015-2018.
2. To facilitate inter and intra sectorial collaboration.
3. To monitor the implementation of the NHMS 2015-2018.
4. To facilitate the utilisation of the NHMS 2015-2018 findings.



**Appendix 3: List of members of Central Coordinating Committee, NHMS 2017**

1. Dr Hj Tahir bin Aris, Director of Institute for Public Health
2. Dr Muhammad Fadhli bin Mohd Yusoff, Coordinator of NHMS 2015-2018
3. Dr. S Maria binti Awaluddin, Principal Investigator of Adolescent Health Survey
4. Pn. Ruhaya binti Salleh, Principal Investigator of Adolescent Nutrition Survey
5. En. Mohamad Aznuddin bin Abd Razak, Principal Investigator of Healthy Mind Screening using DASS
6. Dr Mohd Azahadi bin Omar, Head Data Processing and Data Management
7. Dr Noor Ani binti Ahmad, Central Field Supervisor of Perlis & Kedah
8. Dr. Nor Asiah binti Mohamad, Central Field Supervisor of Johor, Melaka & Negeri Sembilan
9. Dr. Rajini a/p Sooryanarayana, Data Processing & Quality
- 10.Pn. Tee Guat Hiong, Central Field Supervisor of Sarawak
- 11.Dr. Nur Liana binti Ab. Majid, Central Field Supervisor of WP Kuala Lumpur, WP Putrajaya & Selangor
- 12.Cik Hasimah binti Ismail, Central Field Supervisor of Pahang, Kelantan & Terengganu
- 13.Pn. Norzawati binti Yeop, Central Field Supervisor of Perak & Kedah
- 14.Pn. Norazizah binti Ibrahim Wong, Data Processing & Quality
- 15.En. Mohd Hazrin bin Hasim @ Hashim, Central Field Supervisor of WP Labuan & Sabah
- 16.Pn. Lalitha a/p Palaniveloo, Person in charge for Dietary Intake
- 17.Pn. Siti Nor'Ain binti Hashim, Head of ICT Support
- 18.En. Lim Kuang Kuay, Logistic Support
- 19.Pn. Hamizatul Akmal binti Abd. Hamid, Project Manager
- 20.Pn Wan Shakira binti Rodzlan Hasani, Project Manager
- 21.Pn. Cheong Siew Man, Person in-charge for Habitual Food Intake
- 22.Pn. Nazirah Bt Alias, Data Processing & Quality
- 23.Dr. Fazila Haryati Ahmad, Data Processing & Quality

**Appendix 4: Terms of Reference for NHMS 2017 Central Coordinating Team**

No	Team	Duties	Officers
1	Project Management and Finance	<p>Work closely with recruitment group for employment of RA</p> <p>Prepare Questionnaires manual, Data collection manual</p> <p>Meeting with Liason Officers</p> <p>Planning for data collection training</p> <p>Prepare security cards/name tags for research team</p> <p>Arrangement for advanced payment for team managers, nurses and drivers</p> <p>Process claims of MOH staff</p> <p>Prepare tickets for travelling</p> <p>Monitor the expenditure/budget</p>	<p>Dr. Muhammad Fadhli bin Mohd Yusoff</p> <p>Dr. S. Maria Binti Awaluddin Pn Ruhaya binti Salleh</p> <p>Pn. Hamizatul Akmal binti Abd Hamid</p> <p>Pn. Wan Shakira binti Rodzlan Hasani</p> <p>Cik Nur Hazwani binti Mohd Hasri</p>
2	Survey Research Centre	<p>Calculate the sample size</p> <p>Determine the sample distribution by state</p>	<p>Dr. Muhammad Fadhli bin Mohd Yusoff</p> <p>Pn. Norazizah binti Ibrahim Wong</p> <p>Pn. Wan Shakira binti Rodzlan Hasani</p>
3	ICT Unit	<p>Maintenance of the scanning machine</p> <p>Daily back up for databases</p>	<p>Pn. Siti Nor'ain Binti Hashim</p> <p>En. Sulaiman Bin Harun</p> <p>En. Yusmirol Bin Yusop</p> <p>En. Andy Bin Mustaming</p>
4	Central Field Supervisors	<p><b><u>Before Data Collection</u></b></p> <p>Central Field Supervisors are expected to prepare for the initiation of data collection. The preparation tasks include:</p>	<p>Dr Nor Asiah Binti Muhamad</p> <p>Dr Nur Liana Binti Ab Majid</p> <p>Pn. Norzawati Binti Yeop</p> <p>Dr. Noor Ani Binti Ahmad</p>

		<p>Conduct meeting with State Education Office, School Principals, Teacher in-charged for the selected schools.</p> <p>To ensure adequate logistic support for the data collection and liaise with the District Education Office, District Health Office and other relevant departments to ensure that:</p> <ul style="list-style-type: none"> <li>• Human resources are available: Field Supervisors, Team leaders, Research Assistants and drivers.</li> <li>• Manage transport: Vehicles</li> <li>• Manage survey instruments and relevant form</li> <li>• Manage lodging for data collectors</li> </ul> <p><b><u>During Data Collection</u></b></p> <p>Gather feedback from the field on the data collection status and problems related to logistics.</p> <p>Visit the field to help data collectors solve the problem if necessary.</p> <p>To ensure all data collection monitoring forms have been received on time.</p> <p>To ensure bundle from field received by the Operation Centre by hand and bypost( Sabah, Sarawak, WP Labuan)</p> <p>Updating the monitoring board for state achievement and attending CCT meeting.</p>	<p>Pn. Hasimah Binti Ismail</p> <p>Pn. Helen Tee Guat Hiong</p> <p>En. Mohd Hazrin Bin Hasim @ Hashim</p>
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5	Data Processing and management	<p>Setting up data processing facility Development of directory of variables database</p> <p>Development of QC manual for data processing Specify data structure for data processing and data output requirement</p> <p>Responsible for data entry and data Cleaning</p> <p>Monitoring and evaluation of QC performance for data processing</p>	<p>Dr. Mohd Azahadi bin Omar</p> <p>Dr. Rajini a/p sooryanarayana</p> <p>Dr. Fazila Haryati Binti Ahmad</p> <p>Pn. Nazirah Binti Alias</p>
6	Operation Centre	<p>Arrange date and place of meeting</p> <p>Prepare and circulate briefing materials</p> <p>Prepare and circulate minutes of CCT meeting</p> <p>Prepare letters of appointment to state liaison officers, nurses, scouts and data collectors</p> <p>Prepare advertisement material for recruitment of data collectors, team leaders, and interviewers,</p> <p>Prepare letters of notifications for data collections</p> <p>Prepare manuals for scouts, field supervisors, data collectors and nurses</p> <p>Develop a system/format and monitor the distribution of materials/equipment for field work</p> <p>Arrange transport/drivers for distribution and collection of materials/equipment/SAQ</p>	<p>Pn. Hamizatul Akmal binti Abd Hamid</p> <p>En. Azli bin Baharudin</p> <p>Cik Nur Hazwani binti Mohd Hasri</p> <p>Pn. Siti Noafika binti Anwar</p> <p>En. Muhammad Suhaimi bin Mohamad Idrus</p> <p>Cik Shahibul Bariah binti Mat Ghani</p> <p>Pn. Nur Fadzilla binti Mohd Radzi</p> <p>En. Muhammad Zuhdi bin Khiruddin</p> <p>Cik Nurbaiti binti Asmawi</p>

**Appendix 5: List of Research Team Members, NHMS 2017**

- |                                    |  |
|------------------------------------|--|
| 1. Ms. Ainan Nasrina Ismail        | 20. Ms. Norlida Zulkafly                     |
| 2. Mr. Azli Baharudin              | 21. Ms. Nur Ili Mohamad Tarmizi              |
| 3. Ms. Chin Kim Ling               | 22. Ms. Nur Shahida Abdul Aziz               |
| 4. Ms. Chong Siew Man              | 23. Prof. Dr. Poh Bee Koon                   |
| 5. Ms. Fatimah Othman              | 24. Ms. Rashidah Ambak                       |
| 6. Assc. Prof. Dr. Hazizi Abu Saad | 25. Ms. Rohana Ya'akob                       |
| 7. Ms. Jamilah Ahmad               | 26. Ms. Ruby Zainureen Zahedi                |
| 8. Ms. Junaidah Raib               | 27. Ms. Ruhaya Salleh                        |
| 9. Mr. Lai Wai Kent                | 28. Ms. Rusidah Selamat                      |
| 10. Ms. Lalitha a/p Palanivello    | 29. Prof. Dr. Ruzita Abd Talib               |
| 11. Ms. Ling Swee Nian             | 30. Prof. Madya Datin Dr. Safiah Md<br>Yusof |
| 12. Dr. Mahenderan a/l Appukutty   | 31. Ms. Sam Azura Ahmad                      |
| 13. Mr. Mohamad Hasnan Ahmad       | 32. Mr. Shahrulnaz Norhazli Nazri            |
| 14. Mr. Mohamad Ihsan Tahir        | 33. Dr. Subash Shander a/l Ganapathy         |
| 15. Dr. Mohd Azahadi Omar          | 34. Mr. Suhaidi Sudin                        |
| 16. Ms. Noor Hasnani Ismail        | 35. Ms. Syafinaz Sallehuddin                 |
| 17. Ms. Noor Ul-Aziha Muhammad     | 36. Mr. Tan Beng Chin                        |
| 18. Ms. Nor Azian Mohd Zaki        |  |
| 19. Ms. Nor Azizah Ibrahim Wong    |  |

## **Appendix 6: List of Data Collection Teams**

### **WP KUALA LUMPUR**

#### **Liaison Officer**

Ms. Nor Azah binti Ahmad

#### **Field Supervisor**

Ms. Syafinaz Mohd Sallehuddin

Ms. Nur Shahida Abdul Aziz

#### **Nutritionists**

1. Ms. Wan Siti Zulaicha binti Shaharudin
2. Ms. Noorzatul Shuhada binti Md Zaini
3. Ms. Norhasniza binti Yaacob
4. Ms. Sharidatulakmar binti Ismail
5. Mr. Muhammad Asyraf bin Ismail

#### **Research Assistants**

1. Rahimah Binti Ab Rahman
2. Wan Nur Khairunnisa Binti Wan Kozil
3. Nadia Wahida Binti Nordin
4. Farris Fadilah Binti Ramli
5. Heriyansha Bin Hanafiah
6. Ain Munirah Binti Yusof
7. Teoh Jia Yu
8. Nurul Adilin Binti Johari
9. Hiew Yan Ting
10. Mohd Salman Syahmi Bin Mohamad Idris

Appendix 7: Nutrition Questionnaires



**TINJAUAN PEMAKANAN REMAJA 2017**  
மலேசிய பள்ளி மாணவர் உணவு முறை ஆய்வறிக்கை 2017

**BORANG SOAL SELIDIK**  
அளவறிக்கை

**Pengenalan**

Tinjauan ini dijalankan untuk mengetahui status pemakanan, amalan pemakanan, pengambilan makanan, tahap aktiviti Fizikal, dan penggunaan label makanan dan pemakanan anda. Pelajar lain yang terpilih seperti anda di seluruh negara juga menjawab borang soal selidik ini.

Maklumat yang anda berikan akan digunakan untuk membangunkan program-program kesihatan yang lebih baik untuk generasi muda seperti anda.

**அறிமுகம்**

பந்த ஆய்வு உங்கள் உணவு பழக்கமுறைமற்றும் சுகாதாரத்தின் அளவை கணக்கீட பயன்படும். நம் நாட்டில் உள்ள அனைத்து மாணவர்களும் பந்த ஆய்வறிக்கையில் பங்குபெறுகின்றனர்.

நீங்கள் கொடுக்கும் தகவல்கள் நம் நாட்டில் உள்ளவர்களுக்கிடையே நிலையைப் பேச மிகவும் உதவும்.

**Panduan mengisi borang soal-selidik**

ஆய்வறிக்கையை நிரப்ப வழிகாட்டிகள்

1. Jawapan yang anda berikan akan **DIRAHSIAKAN**. Jawab soalan-soalan berdasarkan apa yang tahu dan apa yang anda lakukan. Tidak ada jawapan yang betul atau salah.  
நீங்கள் கொடுக்கும் தகவல்கள் சம்மந்தப்பட்டோர் மட்டுமே பயன்படுத்துவர். உங்களுக்கு தெரிந்த விடையடி அளிக்கவும். சரி அல்லது பிழை என்ற மட்டுமே விடையளிக்கக் கூடாது.
2. Baca soalan dengan teliti. Hitamkan jawapan anda pada kertas jawapan yang disediakan dengan pensil 2B yang dibekalkan.  
கொடுக்கப்பட்டுள்ள கேள்விகளை தெளிவாக படித்தப்பின் 2B எழுதுக்கோலால் விடைத்தாளில் பதிலளிக்கவும்.
3. Cara menghitamkan jawapan:  
பதிலளிக்கும் முறை:  
Hitamkan jawapan anda seperti ini      bukan seperti ini      atau  
பவ்வாறு கருமயாக்கவும்            பவ்வாறல்ல            அல்லது      
4. Hanya satu jawapan bagi setiap soalan **KECUALI** ada arahan lain yang dinyatakan.  
கொடுக்கப்பட்டுள்ள கேள்விகளுக்கு குறிப்பிடப்பட்ட அளவு விடையளிக்க வேண்டும்.
5. Sekiranya anda tidak faham, sila angkat tangan untuk bertanyakan soalan semasa sesi menjawab soalan.  
புரியாவிடில் உங்கள் கரத்தை உயர்த்தி அங்கிருக்கும் ஆசிரியரிடம் கேள்வி கேட்கலாம்.
6. Apabila anda selesai menjawab, tunggu arahan daripada Fasilitator yang menjaga kelas anda.  
விடையளித்து முடித்தப்பின் ஆசிரியர் உங்கள் தால்களை வாங்கும் வரை பொருத்திருங்கள்.

Terima kasih di atas kesudian anda menjawab soal selidik ini.  
பவ்வாய்வறிக்கையை விடையளித்தமைக்கு நன்றி



Tinjauan Persekitaran Keluarga

MODUL A : MAKLUMAT PERIBADI					
தொகுதி A : மாணவர் தகவல்					
Arahan : Isikan ID pelajar, tarikh lahir dan hitamkan jawapan pada kertas jawapan yang disediakan. கட்டளை: மாணவர் பெயர், பிறந்த திகதி, மற்றும் சரியான விடையை கொடுக்கப்பட்டுள்ள விடைத்தாளில் எழுதவும்.					
A1	ID Pelajar மாணவர் ஐடி	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Negeri மாநில	Strata நிலை	Kategori Sekolah பள்ளி பிரிவு	Kod Sekolah பள்ளி குறியீடு
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
A2	Tarikh lahir பிறந்த திகதி	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Hari நாள்	Bulan மாதம்	Tahun ஆண்டு	
A3	Jantina பால்	A. Lelaki -ன் B. Perempuan பெண்			
A4	Bangsa மனம்	A. Melayu மலாய் B. Cina சீனர் C. India இந்தியர் D. Bumiputra Sabah சபா பூர்வீகம் E. Bumiputra Sarawak சரவாக்பூர்வீகம் F. Lain-Lain மற்றது			
		Sekolah Rendah ஆரம்பப்பள்ளி		Sekolah Menengah மடைநிலைப்பள்ளி	
A5	Kelas Àìòò	A. Tahun 4 ஆண்டு 4 B. Tahun 5 ஆண்டு 5 C. Tahun 6 ஆண்டு 6		D. Kelas Peralihan குறைநீக்கல்வகுப்பு E. Tingkatan 1 படிவம் 1 F. Tingkatan 2 படிவம் 2 G. Tingkatan 3 படிவம் 3 H. Tingkatan 4 படிவம் 4 I. Tingkatan 5 படிவம் 5	
A6	Umur ÀÁÀ	A. 10 tahun 10 வயது B. 11 tahun 11 வயது C. 12 tahun 12 வயது		D. 13 tahun 13 வயது E. 14 tahun 14 வயது F. 15 tahun 15 வயது G. 16 tahun 16 வயது H. 17 tahun 17 வயது I. 18 tahun 18 வயது	

<b>MODUL B :</b>	<b>CORAK PEMAKANAN</b>
<b>தொகுதி B :</b>	<b>உணவு பழக்கம்</b>
<b>Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.</b>	
<b>கட்டளை : சரியான விடையைத் தெர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில் கருமையாக்குக .</b>	
<b>B1</b>	<p>Apakah sesi persekolahan anda? உங்கள்பள்ளி எச்சமயத்தில் நடைபெறும் ?</p> <p>A Sesi pagi sahaja / காஸலயில் மட்டும் B Sesi petang sahaja / மதியத்தில் மட்டும் C Sesi pagi sampai petang / காலை முதல் மாலை வரை</p>
<b>B2</b>	<p>Kebiasaannya, dalam seminggu berapa hari anda mengambil sarapan (dari pukul 6.00 pagi hingga 8.00 pagi)? ஒரு வாரத்தில் எத்தனை முறை காலை சிற்றுண்டி உட்கொள்வீர்கள்? (காலை மணி 6.00- லிருந்துகாலை மணி 8.00 வரை)?</p> <p>A 1 hari / 1 நாள் B 2 hari / 2 நாள் C 3 hari / 3 நாள் D 4 hari / 4 நாள் E 5 hari / 5 நாள் F 6 hari / 6 நாள் G 7 hari / 7 நாள் H Tidak berkaitan / Tidak ambil sarapan தொடர்பு இல்லை /காலை உணவு உட்கொள்வதில்லை</p>
<b>B3</b>	<p>Kebiasaannya, dari mana anda dapat makanan itu? வழக்கமாக எங்கு காலை உணவை உட்கொள்வீர்கள்?</p> <p>A Disediakan di rumah / வீடு B Beli di kantin sekolah / பள்ளி சிற்றுண்டிச்சாலை C Beli di restoran atau warung / கடை D Disediakan di asrama / பள்ளி விடுதி E Lain-lain / மற்றது F Tidak ambil sarapan / காலை உணவு உட்கொள்வதில்லை</p>
<b>B4</b>	<p>Sekiranya anda tidak mengambil sarapan, apakah sebabnya? ஏன் காலை உணவை உட்கொள்வதில்லை?</p> <p>A Tiada makanan / உணவு இல்லை B Tiada selera / உண்ண விருப்பமில்லை C Tiada masa / நேரம்இல்லை D Berdiet /kawal berat badan / உணவு கட்டுப்பாட்டிலிருத்தல் E Tiada duit / பணம் பற்றாக்குறை F Lain-lain / மற்றது G Tidak berkaitan/kerana saya mengambil sarapan setiap hari தொடர்பு இல்லை/ தினமும் காலை சிற்றுண்டி உட்கொள்வேன்.</p>

Tamil and English

- B5** Kebiasaannya, dalam seminggu berapa hari anda makan dan/atau minum pada waktu rehat sekolah?  
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை பள்ளி ஓய்வு நேரத்தில் உணவு உட்கொள்வீர்கள்?
- A 0 hari / 0 நாள்  
B 1 hari / 1 நாள்  
C 2 hari / 2 நாள்  
D 3 hari / 3 நாள்  
E 4 hari / 4 நாள்  
F 5 hari / 5 நாள்
- B6** Kebiasaannya, dari mana anda dapat makanan itu?  
வழக்கமாக அவ்வணவை எங்கிருந்து பெருவீர்கள்?
- A Bekal dari rumah / வீடு  
B Beli di kantin sekolah / பள்ளி சிற்றுண்டிச்சாலை  
C Beli di restoran atau warung / கடை  
D Disediakan di asrama / பள்ளி விடுதி  
E Lain-lain / மற்றது  
F Tidak berkaitan/tidak mengambil makan dan/atau minum pada waktu rehat  
தொடர்பு இல்லை/ ஓய்வு நேரத்தில் உணவு உட்கொள்வதில்லை
- B7** Kebiasaannya, dalam seminggu berapa hari anda makan tengah hari (11.00 pagi hingga 3.00 petang)?  
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை மதிய உணவு உண்பீர்கள் (காலை மணி 11.00-  
லிருந்துமாலை மணி 3.00 வரை)?
- A 1 hari / 1 நாள்  
B 2 hari / 2 நாள்  
C 3 hari / 3 நாள்  
D 4 hari / 4 நாள்  
E 5 hari / 5 நாள்  
F 6 hari / 6 நாள்  
G 7 hari / 7 நாள்  
H Tidak mengambil makanan tengah hari / மதிய உணவு உட்கொள்வதில்லை
- B8** Kebiasaannya, dari mana anda dapat makanan itu?  
வழக்கமாக அவ்வணவை எங்கிருந்து பெருவீர்கள்?
- A Disediakan di rumah / வீடு  
B Beli di kantin sekolah / பள்ளி சிற்றுண்டிச்சாலை  
C Beli di restoran atau warung / கடை  
D Disediakan di asrama / பள்ளி விடுதி  
E Lain-lain / மற்றது  
F Tidak berkaitan/tidak ambil makanan tengahari /  
தொடர்பு இல்லை/ ஓய்வு நேரத்தில் உணவு உட்கொள்வதில்லை

- B9** Sekiranya anda tidak mengambil makan tengahari, apakah sebabnya?  
ஏன் மதிய உணவை உட்கொள்வதில்லை?
- A Tiada makanan / உணவு இல்லை  
B Tiada selera / உண்ண விருப்பமில்லை  
C Tiada masa / நேரம் இல்லை  
D Berdiet /kawal berat badan / உணவு கட்டுப்பாட்டிலிருத்தல்  
E Tiada duit / பணம் பற்றாக்குறை  
F Lain-lain / மற்றது  
G Tidak berkaitan/ambil makan tengahari / தொடர்பு இல்லை/ மதிய உணவை உட்கொள்வேன்
- B10** Kebiasaannya, dalam seminggu berapa hari anda mengambil minum petang (3.00 petang hingga 6.00 petang)?  
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை மாலை சிற்றுண்டி உட்கொள்வீர்கள் (மாலை மணி 3.00-  
லிருந்துமாலை மணி 6.00 வரை)?
- A 1 hari / 1 நாள்  
B 2 hari / 2 நாள்  
C 3 hari / 3 நாள்  
D 4 hari / 4 நாள்  
E 5 hari / 5 நாள்  
F 6 hari / 6 நாள்  
G 7 hari / 7 நாள்  
H Tidak minum petang / மாலை சிற்றுண்டி உட்கொள்வதில்லை
- B11** Kebiasaannya, dari mana anda dapat makanan itu?  
வழக்கமாக அவ்வணவை எங்கிருந்து பெருவீர்கள்?
- A Disediakan di rumah / வீடு  
B Beli di kantin sekolah / பள்ளி சிற்றுண்டிச்சாலை  
C Beli di restoran atau warung / கடை  
D Disediakan di asrama / பள்ளி விடுதி  
E Lain-lain / மற்றது  
F Tidak ambil minum petang / மாலை சிற்றுண்டி உட்கொள்வதில்லை
- B12** Kebiasaannya, dalam seminggu berapa hari anda makan malam(6.00 petang hingga 10.00 malam)?  
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை யரவு உணவு உட்கொள்வீர்கள் (மதிய மணி 6.00-  
லிருந்துயரவு மணி 10.00 வரை)?
- A 1 hari / 1 நாள்  
B 2 hari / 2 நாள்  
C 3 hari / 3 நாள்  
D 4 hari / 4 நாள்  
E 5 hari / 5 நாள்  
F 6 hari / 6 நாள்  
G 7 hari / 7 நாள்  
H Tidak makan malam / யரவு உணவு உட்கொள்வதில்லை

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- B13** Kebiasaannya, dari mana anda dapat makanan itu?  
எங்கிருந்து அவ்வணவை பெருவீர்கள்?
- A Disediakan di rumah / வீடு  
B Beli di restoran atau warung / கடை  
C Disediakan di asrama / பள்ளி விடுதி  
D Lain-lain / மற்றது  
E Tidak berkaitan/tidak ambil makan malam / தொடர்பு யல்லை/பரவு உணவு உண்பதில்லை
- B14** Sekiranya anda tidak mengambil makan malam, apakah sebabnya?  
ஏதனால் பரவு உணவு உட்கொள்வதில்லை?
- A Tiada makanan / உணவு யல்லை  
B Tiada selera / உண்ண விருப்பமில்லை  
C Tiada masa / நேரம்யல்லை  
D Berdiet / உணவு கட்டுப்பாடு  
E Tiada duit / பணம் பற்றாக்குறை  
F Lain-lain / மற்றது  
G Tidak berkaitan/ambil makan malam / தொடர்பு யல்லை/பரவு உணவு உட்கொள்வேன்.
- B15** Dalam seminggu yang lepas, berapa kerap anda ambil makanan berat selepas makan malam? (Contoh: nasi lemak, roti canal, mee goreng, burger, ayam goreng, mee segera dan sebagainya. Ini tidak termasuk snek ringan contohnya 2 keping biskut dan/atau satu gelas susu)  
கடந்த வாரத்தில், பரவில் ஏத்தனை முறை அதிகமான அளவில் உணவு உட்கொண்டீர்கள்?  
(உதாரணமாக: நாசி லெமாக், ரொத்தி சாளாய், மீ பிரத்தல், பர்கர், பொரித்தக் கோழி, துரித மீமற்றும் சில. யதில் பால்மற்றும் பிஸ்கிட் போன்ற உணவு அடங்காது. (உதாரணத்திற்கு 2 துண்டு பிஸ்கிட் மற்றும்/ அல்லது ஒரு குவளைப்பால்)
- A 1 hari / 1 நாள்  
B 2 hari / 2 நாள்  
C 3 hari / 3 நாள்  
D 4 hari / 4 நாள்  
E 5 hari / 5 நாள்  
F 6 hari / 6 நாள்  
G 7 hari / 7 நாள்  
H Tidak ambil makanan berat selepas makan malam /  
பரவில் நாள் அதிகமான அளவில் உணவு உண்பதில்லை
- B16** Di manakah anda mengambil makanan berat tersebut?  
எங்கு யல்வணவை உட்கொள்வீர்கள்?
- A Rumah / வீடு  
B Restoran atau warung / கடை  
C Asrama / பள்ளி விடுதி  
D Lain-lain / மற்றது  
E Tidak berkaitan/tidak ambil makanan berat /  
தொடர்பு யல்லை/பரவில் நாள் அதிகமான அளவில் உணவு உண்பதில்லை

- B17** Kebiasaannya, dalam seminggu berapa hari anda makan makanan segera yang dibeli dari restoran makanan segera seperti burger, pizza, ayam goreng, kentang goreng, nugget dan sebagainya?  
வழக்கமாக ஒரு வாரத்தில் எத்தனை முறை துரித உணவு உட்கொள்வீர்கள். உதாரணத்திற்கு பர்கர், பீசா, பொரித்தச் கோழி, பிராக் பிராஸ், நகெட் மற்றும் சில.
- A. 1 hari / 1 நாள்  
B. 2 hari / 2 நாள்  
C. 3 hari / 3 நாள்  
D. 4 hari / 4 நாள்  
E. 5 hari / 5 நாள்  
F. 6 hari / 6 நாள்  
G. 7 hari / 7 நாள்  
H. Tidak ambil makanan segera / நான் துரித உணவு உட்கொள்வதில்லை.
- B18** Berapa kerap anda membawa bekal makanan ke sekolah?  
பொதுவாக எத்தனை முறை பள்ளிக்கு வீட்டிலிருந்து உணவு எடுத்துச்செல்வீர்கள்?
- A. Setiap hari / தினமும்  
B. Kadang-kadang / சில நேரத்தில்  
C. Tidak / பள்ளிக்கு நீர் எடுத்துச் செல்லமாட்டேன்
- B19** Apakah bekal makanan yang biasa dibawa ke sekolah? (Boleh pilih SATU atau DUA jawapan sahaja)  
எந்த உணவை வழக்கமாக பள்ளிக்கு எடுத்துச்செல்வீர்கள்? (ஒன்று அல்லதுபரண்டு உணவை தேர்வு செய்யலாம்)
- A. Nasi lemak/nasi goreng /nasi berlauk / நாசி லெமாக்/நாசி கோரேங்/நாசி பெர்லாவுக்  
B. Mee / Bihun / Kueh Teow / மீ / மீவுன் / குவே தியாவ்  
C. Roti / Ban / Sandwic / ரொத்தி / பன் / சான்விச்  
D. Nugget / Sosej / Burger / நகெட் / சொசேஜ் / பர்கர்  
E. Biskut / பிஸ்கிட்  
F. Buah-buahan / பழம்  
G. Lain-lain / மற்றது  
H. Tidak bawa bekal / பள்ளிக்கு உணவு எடுத்துச் செல்லமாட்டேன்
- B20** Berapa kerap anda membawa bekal minuman ke sekolah?  
பொதுவாக எத்தனை முறை பள்ளிக்கு நீர் எடுத்துச்செல்வீர்கள்?
- A. Setiap hari / தினமும்  
B. Kadang-kadang / சில நேரத்தில்  
C. Tidak / பள்ளிக்கு நீர் எடுத்துச் செல்லமாட்டேன்

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- B21** Apakah bekalan minuman yang biasa dibawa ke sekolah? (Boleh pilih **SATU** atau **DUA** jawapan sahaja)  
வழக்கமாக எவ்வகை நீரை பள்ளிக்கு எடுத்துச் செல்வீர்கள்? (ஒன்று அல்லது மரண்டு விடையை மட்டும் தெர்வு செய்ய்க)
- A Air kosong / தண்ணீர்
- B Air berperisa (air kotak/air sirap/ teh / kopi/ milo)  
சுவைபானம்( சீராப், தேநீர், மீலோ)
- C Air berkarbonat / கார்போனெட் பானம்
- D Susu / minuman berkultur (air yogurt) / பால்/ மோர்
- E Lain-lain / மற்றது
- F Tidak bawa bekal / பள்ளிக்கு நீர் எடுத்துச் செல்லமாட்டேன்
- B22** Kebiasaannya, bagaimana wang saku/duit poket anda banyak dibelanjakan?  
வழக்கமாக பணத்தை எதற்காக செழவு செய்வீர்கள்?
- A Membeli makanan dan/atau minuman / உணவு
- B Membeli alat tulis / எழுத பயன்படுத்தும் பொருட்கள்
- C Simpanan / சேமிப்பு
- D Lain-lain / மற்றது
- E Tidak bawa wang saku/duit poket / பள்ளிக்கு பணம் எடுத்துச் செல்லமாட்டேன்
- B23** Dalam seminggu berapa kali anda makan di luar? Tidak termasuk makan di sekolah dan di asrama.  
வாரத்தில் எத்தனை முறை வெளியே உணவு உட்கொள்வீர்கள்? பள்ளி மற்றும் பள்ளி விடுதியில் உண்பது மதில் உட்படவில்லை.
- A 1 kali / 1 முறை
- B 2 kali / 2 முறை
- C 3 kali / 3 முறை
- D 4 kali / 4 முறை
- E 5 kali / 5 முறை
- F 6 kali / 6 முறை
- G 7 kali atau lebih / 7 முறைக்கு மேல்
- H Tidak pernah / வெளியே உணவு உட்கொள்வதில்லை
- B24** Apakah jenis makanan ringan yang selalu anda makan? (Boleh pilih **SATU** atau **DUA** jawapan sahaja)  
எவ்வித துரித உணவை உட்கொள்வீர்கள் (ஒன்று அல்லது மரண்டு விடையை மட்டும் தெர்வு செய்ய்க)
- A Roti / Bun / Sandwic / ரொட்டி / பன் / சான்விச்
- B Kentang goreng / பிரஞ் பிரைஸ்
- C Biskut / பிஸ்கிட்
- D Buah-buahan / பழம்
- E Kekacang / தானியம்
- F Keropok / கிழங்கு சிப்ஸ்
- G Aiskrim / பனிக்கூல்
- H Tidak ambil makanan ringan / துரித உணவு உட்கொள்வதில்லை

- B25** Berapa kerap anda mengambil makanan ringan tersebut dalam seminggu?  
ஒரு வாரத்தில் எத்தனை முறை துரித உணவு உட்கொள்வீர்கள்?
- A 1 kali / 1 முறை  
B 2 kali / 2 முறை  
C 3 kali / 3 முறை  
D 4 kali / 4 முறை  
E 5 kali / 5 முறை  
F 6 kali / 6 முறை  
G 7 kali atau lebih / 7 முறைக்கு மேல்  
H Tidak pernah makanan ringan atau snek / துரித உணவு உட்கொள்வதில்லை
- B26** Apakah jenis makanan dan/atau minuman yang selalu anda beli dari luar pagar sekolah?(Boleh pilih **SATU** atau **DUA** jawapan sahaja)  
எத்தகைய உணவை பள்ளி வலாகத்தின் வெளியே பெறுவீர்கள்? (ஒன்று அல்லது யரண்டு விடையை மட்டும் தெர்வு செய்க)
- A Gula-gula/coklat / சாக்டெட்  
B Kentang goreng / nuget / sosej / பிரஞ் பிரைஸ்/ நாகெட்/ சொசெஜ்  
C Air berperisa/air berkarbonat / குளிர்்பானம்/ கார்போனெட்பானம்  
D Makanan jeruk / ஊருகாய்  
E Makanan ringan/rapu / துரித உணவு  
F Keropok / சிப்ஸ்  
G Aiskrim / பனிக்கூல்  
H Tidak ambil makanan ringan di luar pagar sekolah / பள்ளி வலாகத்தின் வெளியே உணவு வாங்கமாட்டேன்
- B27** Dalam seminggu, adakah andamembeli makanan dan/atau minuman di luar pagar sekolah?  
ஒரு வாரத்தில் எத்தனை முறை பள்ளி வலாகத்தின் வெளியே உணவு வாங்குவீர்கள்?
- A 1 kali / 1 முறை  
B 2 kali / 2 முறை  
C 3 kali / 3 முறை  
D 4 kali / 4 முறை  
E 5 kali / 5 முறை  
F 6 kali / 6 முறை  
G 7 kali atau lebih / 7 முறைக்கு மேல்  
H Tidak pernah / பள்ளி வலாகத்தின் வெளியே உணவு வாங்கமாட்டேன்



Tinjauan Persekitaran Keluarga

**B28** Sumber media manakah yang paling mempengaruhi pengambilan makanan anda?(Boleh pilih **SATU** atau **DUA** jawapan sahaja)

உங்கள் உணவு பழக்கமுறையை தூண்டிய தொடர்புத்துறை ஊடகம் எது? (ஒன்று அல்லது பரண்டு விடையை மட்டும் தெர்வு செய்க)

- A Media sosial (contoh : Internet, YouTube, Facebook, Instagram, Twitter) / சமூக வளைத்தலம்.(உதாரணம் : யூதுப், முகப்புத்தகம், துவித்தர்)
- B Televisyen / தொலைக்காட்சி
- C Radio / வானொலி
- D Media cetak (contoh: majalah, surat khabar, papan iklan, risalah, katalog) / அச்ச ஊடகங்கள் (உதாரணம்: பத்திரிகை, செய்தித்தாள், விளம்பரம், ஆய்வுகட்டுரைகள், அட்டவணை)
- E Tidak terpengaruh / பாதிக்கப்படவில்லை

**MODUL C : AKTIVITI FIZIKAL**

**தொகுதி C : உடல் செயல்பாடு நடவடிக்கை**

**C1** Aktiviti Fizikal di waktu lapang: Adakah anda melakukan aktiviti-aktiviti yang disenaraikan di bawah sepanjang 7 hari yang lepas (minggu lepas). Jika **YA**, berapa kali?

ஒவ்வொரு நேரத்தில் உடல் செயல்பாடு நடவடிக்கைகள்: கடந்த 7 நாட்களில் கீழ்க்கண்டவற்றை எவ்வாறு செய்தீர்? (கடந்த வாரம்). ஆம் என்றால் எத்துனை முறை?

	<b>Aktiviti நடவடிக்கை</b>	<b>Tiada</b>	<b>1-2 kali முறை</b>	<b>3-4 kali முறை</b>	<b>5-6 kali முறை</b>	<b>7 kali atau lebih முறை</b>
a	Lompat tali சிகிப்பிங்	A	B	C	D	E
b	Mendayung / Berkenu படகு ஓட்டல்	A	B	C	D	E
c	Silat / Karate / Taekwondo சிலாட் / கராட்டே / தைக்கொண்டோ	A	B	C	D	E
d	Bermain kejar-kejar ஓடி பிடித்து விளையாடல்	A	B	C	D	E
e	Bersenam dengan berjalan நடத்தல்	A	B	C	D	E
f	Berbasikal மிதிவண்டி ஓட்டல்	A	B	C	D	E
g	Joging / Berlari மெதுவோட்டம்	A	B	C	D	E
h	Senamrobik ஏரோபிக்ஸ்	A	B	C	D	E
i	Berenang நீச்சல் அடித்தல்	A	B	C	D	E
j	Bola lisut / Besbol பேல்பாஸ்போல்	A	B	C	D	E
k	Menari நடனம்	A	B	C	D	E
l	Ragbi ரக்பி	A	B	C	D	E
m	Badminton பூப்பந்து	A	B	C	D	E
n	Hoki ஹோகி	A	B	C	D	E
o	Bola tampar கைப்பந்து	A	B	C	D	E
p	Bola keranjang / Bola jarring நெட்பால்	A	B	C	D	E
q	Sepak takraw செபாக் டாக்ரா	A	B	C	D	E
r	Bola sepak / Futsal காற்பந்து	A	B	C	D	E
s	Pingpong பிங்பொங்	A	B	C	D	E

Tinjauan Persekitaran (English)

- C2** Dalam 7 hari yang lepas semasa aktiviti kelas pendidikan jasmani, berapa kerap anda berada dalam keadaan sangat aktif (bermain, berlari, melontar, melompat).  
கடந்த 7 நாட்களில் உடற்கல்வி பாடத்தின் பொழுது, எத்துனை முறை நீங்கள் முழுமையாகச் செயல்பட்டீர்கள்? (விளையாடுதல், ஓடுதல், குதித்தல்).
- A Saya tidak mengikuti kelas pendidikan jasmani  
நான் உடற்கல்வி வகுப்பில் பங்குப்பெறவில்லை
- B Sangat jarang / மிகவும் குறைவு
- C Kadang-kadang / சில சமயத்தில்
- D Agak kerap / சற்று அதிகமாக
- E Selalu / எப்பொழுதும்
- C3** Dalam 7 hari yang lepas, apakah perkara yang anda biasa lakukan semasa waktu rehat di sekolah?  
கடந்த 7 நாட்களில், ஓய்வு நேரத்தின் பொழுது நீங்கள் என்ன செய்தீர்கள்?
- A Duduk (berbual, membaca, membuat kerja sekolah)  
உட்கார்ந்திருந்தேன் (பேசிக்கொண்டு, படித்துக்கொண்டு, பாடம் செய்துக்கொண்டு)
- B Berdiri atau berjalan-jalan  
தின்றுகொண்டு அல்லது நடந்துக்கொண்டிருந்தேன்
- C Berlari atau bermain sedikit  
ஓடிக்கொண்டு அல்லது விளையாடிக்கொண்டிருந்தேன்
- D Berlari dan bermain sedikit  
ஓடிக்கொண்டுமற்றும் விளையாடிக்கொண்டிருந்தேன்
- E Berlari dan bermain hampir sepanjang masa  
ஓய்வு நேரம் முழுவதும் விளையாடிக்கொண்டிருந்தேன்
- C4** Dalam 7 hari yang lepas, apakah perkara yang biasa anda lakukan semasa waktu makan tengahari (selain daripada makan)?  
கடந்த 7 நாட்களில், ஓய்வு நேரத்தின் பொழுது நீங்கள் என்ன செய்தீர்கள்?
- A Duduk (berbual, membaca, membuat kerja sekolah)  
உட்கார்ந்திருந்தேன் (பேசிக்கொண்டு, படித்துக்கொண்டு, பாடம் செய்துக்கொண்டு)
- B Berdiri atau berjalan-jalan  
தின்றுகொண்டு அல்லது நடந்துக்கொண்டிருந்தேன்
- C Berlari atau bermain sedikit  
ஓடிக்கொண்டு அல்லது விளையாடிக்கொண்டிருந்தேன்
- D Berlari dan bermain sedikit  
ஓடிக்கொண்டுமற்றும் விளையாடிக்கொண்டிருந்தேன்
- E Berlari dan bermain hampir sepanjang masa  
ஓய்வு நேரம் முழுவதும் விளையாடிக்கொண்டிருந்தேன்

- C5** Dalam 7 hari yang lepas, berapa harikah anda bersukan, menari atau bermain dengan **aktif sebaik sahaja tamat waktu persekolahan**?  
கடந்த 7 நாட்களில், எத்துனை நாள் பள்ளி நேரத்திற்கு அப்பால் நீங்கள் உடல் செயல்பாடு நடவடிக்கையில் ஈடுபடுவீர்கள்?
- A Tiada / ஈடுபடிவதில்லை  
B 1 hari / 1 நாள்  
C 2 atau 3 hari / 2 அல்லது 3 நாள்  
D 4 hari / 4 நாள்  
E 5 hari / 5 நாள்
- C6** Dalam 7 hari yang lepas, berapa harikah anda bersukan, menari atau bermain dengan **aktif pada waktu petang**?  
A Tiada / ஈடுபடவில்லை  
B 1 hari / 1 நாள்  
C 2 atau 3 hari / 2 அல்லது 3 நாள்  
D 4 atau 5 hari / 4 அல்லது 5 நாள்  
E 6 atau 7 hari / 6 அல்லது 7 நாள்
- C7** Pada hujung minggu yang lepas, berapa kali anda terlibat dengan aktiviti bersukan, menari atau melibatkan diri dengan permainan yang aktif?  
கடந்த வாரத்தில் எத்துனை முறை நீங்கள் உடல் செயல்பாடு நடவடிக்கையில் ஈடுபட்டீர்கள்?
- A Tiada / ஈடுப்படமாட்டேன்.  
B 1 kali / 1 முறை  
C 2 atau 3 kali / 2 அல்லது 3 முறை  
D 4 atau 5 kali / 4 அல்லது 5 முறை  
E 6 atau lebih kali / 6 முறைக்கு மேல்

Tinjauan Persekitaran Keluarga

**C8** Yang manakah antara pernyataan berikut menggambarkan diri anda dalam tempoh 7 hari yang lepas?  
கீழ்வருவனவற்றில் எது உண்மை?

A Saya menggunakan semua atau kebanyakan masa lapang saya dengan melakukan aktiviti ringan  
என் ஓய்வு நேரத்தில் சாதாரண உடற்பயிற்சியில் ஈடுபட்டேன்

B Saya kadang-kadang (1-2 kali seminggu) melakukan aktiviti fizikal semasa waktu lapang saya (contoh: bersukan, berlari, berenang, berbasikal, aktiviti aerobik)  
என் ஓய்வு நேரத்தில் சில சமயம் (1-2 முறை ஒரு வாரத்தில்) உடல் செயல்பாட்டு நடவடிக்கையில் ஈடுபடுவேன். (உதாரணம்: ஓடுதல், நீச்சலடித்தல், மிடிவண்டி ஓட்டுதல், ஓரோபிக்ஸ்)

C Saya selalu (3-4 kali seminggu) melakukan aktiviti fizikal semasa waktu lapang saya (contoh: bersukan, berlari, berenang, berbasikal, aktiviti aerobik)  
என் ஓய்வு நேரத்தில் (3-4 முறை ஒரு வாரத்தில்) உடல் செயல்பாட்டு நடவடிக்கையில் ஈடுபடுவேன். (உதாரணம்: ஓடுதல், நீச்சலடித்தல், மிடிவண்டி ஓட்டுதல், ஓரோபிக்ஸ்)

D Saya kerap (5-6 kali seminggu) melakukan aktiviti fizikal semasa waktu lapang saya (contoh: bersukan, berlari, berenang, berbasikal, aktiviti aerobik)  
நான் ஓய்வு நேரத்தில் (5-6 முறை ஒரு வாரத்தில்) உடல் செயல்பாட்டு நடவடிக்கையில் ஈடுபடுவேன். (உதாரணம்: ஓடுதல், நீச்சலடித்தல், மிடிவண்டி ஓட்டுதல், ஓரோபிக்ஸ்)

E Saya sangat kerap (7 kali atau lebih seminggu) melakukan aktiviti fizikal semasa waktu lapang saya (contoh: bersukan, berlari, berenang, berbasikal, aktiviti aerobik)  
நான் எப்பொழுதும் (7 முறைக்கு மேல் ஒரு வாரத்தில்) உடல் செயல்பாட்டு நடவடிக்கையில் ஈடுபடுவேன். (உதாரணம்: ஓடுதல், நீச்சலடித்தல், மிடிவண்டி ஓட்டுதல், ஓரோபிக்ஸ்)

**C9** Tandakan kekerapan anda melakukan aktiviti fizikal (seperti bersukan, bermain, menari atau apa-apa aktiviti fizikal) untuk setiap hari pada minggu lepas.  
எத்துனை முறை ஒரு வாரத்தில் உடல் செயல்பாட்டு நடவடிக்கையில் ஈடுபடுவீர்கள்?  
(உதாரணம்: ஓடுதல், நீச்சலடித்தல், மிடிவண்டி ஓட்டுதல், ஓரோபிக்ஸ்) ஒரு நாளில் எத்துனை முறை?

Hari நாள்		Tiada Aktiviti நடவடிக்கையில் ஈடுபடுவதில்லை	(1-2 kali) (1-2 முறை)	(3-4 kali) (3-4 முறை)	(5-6 kali) (5-6 முறை)	(7 kali atau lebih) (7 முறைக்கு மேல்)
a	Isnin திங்கள்	A	B	C	D	E
b	Selasa செவ்வாய்	A	B	C	D	E
c	Rabu புதன்	A	B	C	D	E
d	Khamis வியாழன்	A	B	C	D	E
e	Jumaat வெள்ளி	A	B	C	D	E
f	Sabtu சனி	A	B	C	D	E
g	Ahad ஞாயிறு	A	B	C	D	E

- C10** Adakah anda sakit pada minggu lepas, atau adakah terdapat sebarang perkara yang menghalang anda daripada melakukan aktiviti fizikal yang biasa dilakukan pada minggu lepas?  
கடந்த வாரம் உங்களின் உடல் நிலை பாதிக்கப்பட்டிருந்ததா, அல்லது ஏதாவது எதிர்பாராத சம்பவம் உடற்பயிற்சி நேரத்தை குறிக்கிட்டதா?
- A Ya / ஆம்  
B Tidak / இல்லை
- C11** Pada **hujung minggu** adakah anda menonton televisyen dan/atau menggunakan komputer dan/atau bermain permainan video (contoh: *PSP, Playstation, Gameboy dan lain-lain*)?  
கடந்த வார பறுதியில் தொலைக்காட்சி, கணினி, அல்லது கணினி விளையாட்டில் ஈடுபட்டீர்களா? (உதாரணம்: *பிஎஸ்பி, பிலே சிதேசன், கேம்போய் மற்றும் சில*)?
- A Ya / ஆம்  
B Tidak / இல்லை
- C12** Berapa lamakah anda menonton televisyen dan/atau menggunakan komputer dan/atau bermain permainan video pada **hujung minggu**?  
எவ்வளவு நேரம் கடந்த வார பறுதியில் தொலைக்காட்சி, கணினி, அல்லது கணினி விளையாட்டில் ஈடுபட்டீர்களா?
- A kurang dari 1 jam sehari  
1 மணி நேரத்திற்கு குறைவாக
- B 1 jam hingga kurang dari 2 jam sehari  
ஒரு நாளில் 1 மணியிலிருந்து 2 மணி நேரம்
- C 2 jam hingga kurang dari 3 jam sehari  
ஒரு நாளில் 2 மணியிலிருந்து 3 மணி நேரம்
- D 3 jam hingga kurang dari 4 jam sehari  
ஒரு நாளில் 3 மணியிலிருந்து 4 மணி நேரம்
- E Lebih dari 4 jam sehari  
4 மணி நேரத்திற்கு மேல்
- C13** Pada **hari persekolahan** adakah anda menonton televisyen dan/atau menggunakan komputer dan/atau bermain permainan video (contoh: *PSP, Playstation, Gameboy dan lain-lain*)?  
பள்ளி நாட்களில் தொலைக்காட்சி, கணினி, அல்லது கணினி விளையாட்டில் ஈடுபட்டீர்களா?
- A Ya / ஆம்  
B Tidak / இல்லை

*தமிழ்நாடு மருத்துவக் கல்வி*

- C14** Berapa lamakah anda menonton televisyen dan/atau menggunakan komputer dan/atau bermain permainan video pada **hari persekolahan**?  
எவ்வளவு நேரம் டிவில் செலவழிப்பீர்கள்?
- A kurang dari 1 jam sehari  
1 மணி நேரத்திற்கு குறைவாக
- B 1 jam hingga kurang dari 2 jam sehari  
ஒரு நாளில் 1 மணியிலிருந்து 2 மணி நேரம்
- C 2 jam hingga kurang dari 3 jam sehari  
ஒரு நாளில் 2 மணியிலிருந்து 3 மணி நேரம்
- D 3 jam hingga kurang dari 4 jam sehari  
ஒரு நாளில் 3 மணியிலிருந்து 4 மணி நேரம்
- E Lebih dari 4 jam sehari  
4 மணி நேரத்திற்கு மேல்

<b>MODUL D : PERSEPSI PENGURUSAN BERAT BADAN</b>	
<b>தொகுதி D : உடல் எடை கட்டுப்பாடு</b>	
<b>Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.</b>	
<b>கட்டளை : சரியான விடையைத் தெர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில்</b>	
<b>D1</b>	<p>Pada masa sekarang, anda rasa anda : தற்சமயத்தில், என் உடல் எடை:</p> <p>A Kurang berat badan yang ketara மிகவும் குறைவாக உள்ளது</p> <p>B Kurang berat badan குறைவாக உள்ளது</p> <p>C Mempunyai berat badan yang sesuai சரியாக உள்ளது</p> <p>D Berlebihan berat badan சற்று அதிகமாக உள்ளது</p> <p>E Sangat berlebihan berat badan மிகவும் அதிகமாக உள்ளது</p>
<b>D2</b>	<p>Apakah yang anda sedang lakukan terhadap berat badan anda? உங்கள் உடல் எடையை சரிசெய்ய நீங்கள் ஏதாவது முயற்சியில் ஈடுபட்டுள்ளீர்களா?</p> <p>A Saya sedang berusaha untuk menurunkan berat badan saya உடல் எடையை குறைக்க முயற்சிக்கிறேன்</p> <p>B Saya sedang berusaha untuk menambahkan berat badan saya உடல் எடையை அதிகரிக்க முயற்சிக்கிறேன்</p> <p>C Saya tidak membuat apa-apa terhadap berat badan saya ஒரு முயற்சியிலும் ஈடுபடவில்லை</p> <p>D Saya sedang mengekalkan berat badan saya உடல் எடையை கட்டுப்படுத்த முயற்சிக்கிறேன்</p>
<b>D3</b>	<p>Sekiranya anda berhasrat untuk <b>mengurangkan berat badan</b>, apakah faktor utama yang mendorong anda berbuat demikian? எனனால் நீங்கள் உடல் எடையை குறைக்க முயற்சி செய்கிறீர்கள்?</p> <p>A Kesihatan உடல் நிலையைப் பேச</p> <p>B Kecantikan அழகைப் பேச</p> <p>C Meningkatkan keyakinan diri தன்னிக்கையை உயர்த்த</p> <p>D Mendapat ramai kawan நிறைய நண்பர்கள் கிடைக்க</p> <p>E Tidak berhasrat mengurangkan berat badan உடல் எடையைக் குறைக்க விருப்பமில்லை</p>



Tinjauan Persekitaran Keluarga

**D4** Sekiranya anda berhasrat untuk **mengurangkan berat badan**, apakah kaedah yang menjadi pilihan utama anda? எவ்வாறு உடல் எடையை குறைக்க விருப்பம்?

A Bersenam உடற்பயிற்சி

B Kurangkan pengambilan makanan tinggi lemak (contoh: makanan bergoreng) கொழுப்பு நிறைந்த உணவை குறைத்தல்

C Kurangkan pengambilan makanan manis டீஸிப்பு நிறைந்த உணவை குறைத்தல்

D Meningkatkan pengambilan sayur-sayuran dan buah-buahan நிறைய பழம் மற்றும் காய்கறிகள் உட்கொள்ளுதல்

E Tidak mengambil hidangan utama (sarapan/ tengah hari/ makan malam) உணவை தவிர்த்தல் (காலை சிற்றுண்டி/ மாலை உணவு/ யரவு உணவு)

F Mengambil pil diet/menggunakan krim pelangsing tubuh மருந்து பயன்படுத்துதல்

G Berpuasa விரதம்

H Mendapat khidmat professional அறிவுரை நாடுதல்

I Tidak berhasrat mengurangkan berat badan உடல் எடையைக் குறைக்க விருப்பமில்லை

**D5** Sekiranya anda berhasrat untuk **menambahkan berat badan**, apakah faktor utama yang mendorong anda berbuat demikian? அதனால் நீங்கள் உடல் எடையை அதிகரிக்க முயற்சி செய்கிறீர்கள்?

A Kesihatan / உடல் நிலையைப் பேண

B Kecantikan / அழகைப் பேண

C Meningkatkan keyakinan diri / தன்னிக்கையை உயர்த்த

D Mendapat ramai kawan / நிறைய நண்பர்கள் கிடைக்க

E Tidak berhasrat menambah berat badan / உடல் எடையைக் அதிகரிக்க விருப்பமில்லை

**D6** Sekiranya anda berhasrat untuk **menambahkan berat badan**, apakah kaedah yang menjadi pilihan utama anda? எவ்வாறு உடல் எடையை அதிகரிப்பீர்கள்?

A Menambah kuantiti makanan yang diambil உட்கொள்ளும் உணவின் அளவை அதிகரிப்பேன்

B Mengambil suplemen (Makanan tambahan seperti susu, suplemen vitamin) மருந்து உட்கொள்ளுவேன்

C Mengambil makanan yang berkalori tinggi அதிக புரதச்சத்து உள்ள உணவை உட்கொள்ளுவேன்

D Lain-lain மற்றது

F Tidak berhasrat menambah berat badan உடல் எடையைக் அதிகரிக்க விருப்பமில்லை

<b>MODUL E :</b>	<b>PENGAMBILAN SUPLEMEN</b>
<b>தொகுதி E :</b>	<b>விடமின் மற்றும் மாற்றுச்சத்துணவு உட்கொள்ளுதல்</b>
<b>Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.</b>	
<b>கட்டளை : சரியான விடையைத் தெரிவு செய்து கொடுக்கப்படுள்ள விடைத்தாளில்</b>	
<b>E1</b>	<p>Adakah anda ada mengambil sebarang suplemen <b>vitamin / mineral</b>? நீங்கள் விடமின் ஏதாவது உட்கொள்கிறீர்களா?</p> <p>A Ya / ஆம்</p> <p>B Tidak / இல்லை</p> <p>(Jika <b>TIDAK</b>, sila jawab <b>TIDAK AMBIL SUPLEMEN</b> di soalan E2, E3, dan E4) (இல்லை என்றால், விடமின் உட்கொள்ளவில்லை என்று E2, E3, மற்றும் E4 கேள்விகளில் விடையளிக்கவும்)</p>
<b>E2</b>	<p>Apakah jenis suplemen vitamin / mineral yang biasa diambil? எவ்வகை விடமின் உட்கொள்வீர்கள்?</p> <p>A Multivitamin / மல்திவிடமின்</p> <p>B Vitamin C / விடமின் C</p> <p>C Zat besi (Ferum) / டிரும்பு சத்து</p> <p>D Lain-lain / மற்றது</p> <p>E Tidak ambil suplemen / விடமின் உட்கொள்ளவில்லை</p>
<b>E3</b>	<p>Apakah sebab anda mengambil suplemen vitamin / mineral tersebut? எதனால் விடமின் உட்கொள்கிறீர்கள்?</p> <p>A Atas arahan doktor / மருத்துவரின் ஆலோசனை</p> <p>B Atas arahan ibubapa / பெற்றோரின் ஆலோசனை</p> <p>C Kesedaran sendiri / சுய முயற்சி</p> <p>D Pengaruh kawan-kawan / நண்பர்களால்</p> <p>E Lain-lain / மற்றது</p> <p>F Tidak ambil suplemen / விடமின் உட்கொள்ளவில்லை</p>
<b>E4</b>	<p>Berapa kerap anda mengambil suplemen vitamin / mineral tersebut? ஒரு வாரத்தில் எத்தனை முறை நீங்கள் விடமின் உட்கொள்வீர்கள்?</p> <p>A Setiap hari / ஒவ்வொரு நாளும்</p> <p>B 5-6 kali seminggu / 5-6 முறை</p> <p>C 3-4 kali seminggu / 3-4 முறை</p> <p>D 1-2 kali seminggu / 1-2 முறை</p> <p>E Tidak ambil suplemen / விடமின் உட்கொள்ளவில்லை</p>

Tinjauan Persekitaran Keluarga

- E5** Adakah anda ada mengambil sebarang suplemen **makanan**?  
நீங்கள் மாற்றுச்சத்துணவு உட்கொள்வீர்களா?
- A Ya / ஆம்  
B Tidak / பல்லை
- (Jika **TIDAK**, sila jawab **TIDAK AMBIL SUPLEMEN** di soalan E6, E7, dan E8)  
(பல்லை என்றால், விடமின் உட்கொள்ளவில்லை என்று E2, E3, மற்றும் E4 கேள்விகளில் விடையளிக்கவும்)
- E6** Apakah jenis suplemen makanan yang biasa diambil?  
எவ்விதமான மாற்றுச்சத்துணவை நீங்கள் உட்கொள்கிறீர்கள்?
- A Spirulina / சிபிருலினா  
B Minyak ikan / மீன் எண்ணை  
C Madu atau hasil madu / தேன்  
D Pati ayam / கோழி ஸ்தார்ச்  
E Lain-lain / மற்றது  
F Tidak ambil suplemen / விடமின் உட்கொள்ளவில்லை
- E7** Apakah sebab anda mengambil suplemen makanan tersebut?  
எதனால் மாற்றுச்சத்துணவு உட்கொள்கிறீர்கள்?
- A Atas arahan doktor  
மருத்துவரின் ஆலோசனை  
B Atas arahan ibubapa  
பெற்றோரின் ஆலோசனை  
C Kesedaran sendiri  
சுய முயற்சி  
D Pengaruh kawan-kawan  
நண்பர்களால்  
E Lain-lain  
மற்றது  
F Tidak ambil suplemen  
விடமின் உட்கொள்ளவில்லை
- E8** Berapa kerap anda mengambil suplemen makanan tersebut?  
ஒரு வாரத்தில் எத்தனை முறை நீங்கள் மாற்றுச்சத்துணவு உட்கொள்வீர்கள்?
- A Setiap hari / ஒவ்வொரு நாளும்  
B 5-6 kali seminggu / 5-6 முறை  
C 3-4 kali seminggu / 3-4 முறை  
D 1-2 kali seminggu / 1-2 முறை  
E Tidak ambil suplemen / விடமின் உட்கொள்ளவில்லை

<b>MODUL F :</b>	<b>LABEL MAKANAN DAN PEMAKANAN (SEKOLAH MENENGAH SAHAJA)</b>																		
<b>தொகுதி F :</b>	<b>உணவு மற்றும் உணவு உல்கொள்ளும்முறையையும்குறிப்பிடுக. (படைநிலைப்பள்ளி மட்டும்)</b>																		
<b>Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.</b>																			
<b>கட்டளை : சரியான விடையைத் தேர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில்</b>																			
<b>F1</b>	<p>Adakah anda membaca label makanan ketika membeli atau menerima makanan/minuman? <b>ஒர் உணவுப் பொருளை வாங்குவதற்கு முன் நீங்கள் அதன் அடையாள அட்டையை படிப்பீர்களா?</b></p> <p>A. Ya, setiap kali (<b>terus ke soalan F3 dan jawab hingga soalan F10</b>) ஆம், ஒவ்வொருமுறையும் (கேள்வி F3- டல்பருந்து F10 வரை பதிலளிக்கவும்)</p> <p>B. Ya, kadang-kadang / ஆம், சில சமயத்தில்</p> <p>C. Tidak (<b>silalah jawab soalan F2 dan terus ke soalan F5 hingga F8</b>) டல்லை (கேள்வி F2 மற்றும் F5 பின் அதிலிருந்து தொடர்ந்து F8 வரை பதிலளிக்கவும்)</p>																		
<b>F2</b>	<p>Jika anda tidak membaca label makanan, nyatakan sebab-sebabnya? <b>Anda boleh memilih lebih daripada satu jawapan.</b> எனால் நீங்கள் அவ்வடையாள அட்டையை படிக்கமாதிர்கள்? <b>ஒரு விடைக்கு மேல் தேர்வு செய்யலாம்.</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Sebab-sebab tidak membaca label makanan காரணம்</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Tulisan kecil / சிறிய எழுத்து</td> </tr> <tr> <td>B</td> <td>Tidak faham / புரியவில்லை</td> </tr> <tr> <td>C</td> <td>Tidak menarik / கவனத்தை ஈர்க்கவில்லை</td> </tr> <tr> <td>D</td> <td>Tidak tahu kepentingan / முக்கியத்துவம் தெரியவில்லை</td> </tr> <tr> <td>E</td> <td>Tiada masa / நேரமில்லை</td> </tr> <tr> <td>F</td> <td>Telah mengetahui tentang maklumat அந்த உணவைப் பற்றித் தெரியும்</td> </tr> </tbody> </table>	Sebab-sebab tidak membaca label makanan காரணம்		A	Tulisan kecil / சிறிய எழுத்து	B	Tidak faham / புரியவில்லை	C	Tidak menarik / கவனத்தை ஈர்க்கவில்லை	D	Tidak tahu kepentingan / முக்கியத்துவம் தெரியவில்லை	E	Tiada masa / நேரமில்லை	F	Telah mengetahui tentang maklumat அந்த உணவைப் பற்றித் தெரியும்				
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F	Telah mengetahui tentang maklumat அந்த உணவைப் பற்றித் தெரியும்																		
<b>F3</b>	<p>Apakah jenis maklumat panel maklumat pemakanan yang anda baca? <b>Anda boleh memilih lebih daripada satu jawapan.</b> எந்த வகையான தகவலை நீங்கள் உணவு அடையாள அட்டையில் படித்தீர்கள்? <b>ஒரு விடைக்கு மேல் தேர்வு செய்யலாம்</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Maklumat khasiat makanan</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Jumlah tenaga makanan உணவுச்சத்து</td> </tr> <tr> <td>B</td> <td>Kandungan karbohidrat/gula ஈட்டிச்சத்துமற்றும் சர்க்கரையின்அளவு</td> </tr> <tr> <td>C</td> <td>Kandungan lemak கொழுப்பின் அளவு</td> </tr> <tr> <td>D</td> <td>Kandungan protein புரதச்சத்து</td> </tr> <tr> <td>E</td> <td>Kandungan garam/natrium உப்பின் அளவு</td> </tr> <tr> <td>F</td> <td>Kandungan vitamin விட்டமினின் அளவு</td> </tr> <tr> <td>G</td> <td>Kandungan mineral கனிமத்தின் அளவு</td> </tr> <tr> <td>H</td> <td>Serat (fiber) ஈபபெர்</td> </tr> </tbody> </table>	Maklumat khasiat makanan		A	Jumlah tenaga makanan உணவுச்சத்து	B	Kandungan karbohidrat/gula ஈட்டிச்சத்துமற்றும் சர்க்கரையின்அளவு	C	Kandungan lemak கொழுப்பின் அளவு	D	Kandungan protein புரதச்சத்து	E	Kandungan garam/natrium உப்பின் அளவு	F	Kandungan vitamin விட்டமினின் அளவு	G	Kandungan mineral கனிமத்தின் அளவு	H	Serat (fiber) ஈபபெர்
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*Tinjauan Pemakanan Remaja*

**F4** Mengambil contoh gambar minuman di bawah, apakah jenis maklumat berikut yang anda baca? **Anda boleh memilih lebih daripada satu jawapan.**

கீழ்க்காட்டுக்கப்பட்டிருள்ள தண்ணீர் பாட்டிலில் எவ்வகையான தகவலை நீங்கள் பெற முடியும்?, (ஒரு விடைக்கு மேல் தேர்வு செய்யலாம்)



Jenis Maklumat தகவல்களின் வகை	
A	Tarikh luput காலாவதியாகும் திகதி
B	Akuan pemakanan ஊட்டச்சத்து கூற்றுகள்
C	Panel maklumat pemakanan ஊட்டச்சத்து தகவல்
D	Logo halal ஹலால் சின்னம்
E	Senarai ramuan/bahan பொருளடக்கம்
F	Arahan penyimpanan வழிமுறை

Berdasarkan kepada panel maklumat pemakanan pada **satu Minuman Kotak XYZ** yang ditunjukkan di bawah. Sila baca dan nyatakan sama ada kenyataan berikut adalah betul atau salah.

கீழ்க்காணும் அட்டவணையில் குளிர்பானம் XYZ-யின் ஊட்டச்சத்து தகவல்கள் கொடுக்கப்பட்டுள்ளது. அதை படித்தப்பின் கொடுக்கப்பட்டுள்ள கூற்றுக்கள் சரி அல்லது பிழை என அடையாளம் காண்க.

Maklumat Pemakanan bagi Minuman XYZ குளிர்பானம் XYZ		
Saiz hidangan : 250ml பானத்தின் அளவு : 250ml Jumlah hidangan bagi setiap kotak: 1 பரிமாறும் அளவு: 1		
	100 ml	250ml
Tenaga (kcal) சத்து	56	140
Karbohidrat (g) ஊட்டச்சத்து	10.9	27.3
Jumlah gula (g) சர்க்கரை	10.6	26.5
Protein (g) புரதச்சத்து	0	0
Lemak (g) கொழுப்பு	0	0

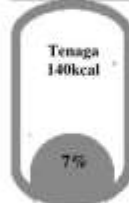
- F5** Jika saya minum 100ml minuman ini, ia membekalkan 56 kcal tenaga.  
நான் 100ml குளிர்பானம் குடித்தால், எனக்கு 56 கலோரிச் சத்துகள் கிடைக்கும்.
- A Betul / சரி  
B Salah / பிழை  
C Tidak tahu / தெரியவில்லை
- F6** Jika saya minum satu kotak minuman ini, bermaksud saya telah mengambil 26.5 gram gula.  
ஓர் குளிர்பானத்தை நான் முழுமையாக அருந்தினால், நான் 26.5 கிராம் சர்க்கரை எடுப்பதற்கு ஈடாகும்.
- A Betul / சரி  
B Salah / பிழை  
C Tidak tahu / தெரியவில்லை

## Tinjauan Pemakanan Remaja

Berdasarkan kepada label kandungan tenaga pada pandangan hadapan (*front of pack labelling*) di bawah, sila nyatakan sama ada kenyataan berikut adalah betul atau salah.

கீழ்க்காணும் கலோரி தகவலுக்கேற்ப, கொடுக்கப்பட்டுள்ள கூற்று சரி அல்லது பிழை என்று குறிப்பிடுக.


Satu Hidangan  
Mengandungi 250 ml  
ஒரு பரிமாறலில் 250 ml உள்ளது



Berdasarkan  
2000kcal

- F7** Nilai tenaga untuk dua hidangan makanan ini adalah 140kcal. 2 பரிமாறலில் சத்தின் அளவு 140kcal.
- A Betul / சரி  
B Salah / பிழை  
C Tidak tahu / தெரியவில்லை
- F8** Jika saya minum satu hidangan makanan ini, ia membekalkan 7% tenaga daripada 2000 kalori tersebut. நான் டீயை குடி செய்தால், எனக்கு 2000 கலோரியிலிருந்து 7% சத்து கிடைக்கும்.
- A Betul / சரி  
B Salah / பிழை  
C Tidak tahu / தெரியவில்லை

**Produk aiskrim A**  
பனிக்கூல் A



**Senarai Ramuan /Bahan:**  
**உள்ளடக்கம்:**

Gula, Olein/Minyak Isirung Kelapa Sawit, Pepejal Susu, Sirap Glukosa, Serbuk Koko  
சர்க்கரை, பனை எண்ணெய், பால், Sirap குளுகோஸ், கொக்கோ

**F9** Apakah ramuan/bahan paling banyak digunakan dalam aiskrim ini?  
பப்பனிக்கூலில் அதிகமான அளவில் பயன்படுத்தப்பட்டுள்ள பொருள் எது?

A. Pepejal susu  
பால்

B. Sirap glukosa  
குளுகோஸ்

C. Gula  
சர்க்கரை

D. Olein/Minyak isirung kelapa sawit  
பனை எண்ணெய்

E. Serbuk koko  
கொக்கோ

**F10** Apakah ramuan/bahan yang paling sedikit dalam aiskrim ini?  
பப்பனிக்கூலில் குறைவான அளவில் பயன்படுத்தப்பட்டுள்ள பொருள் எது?

A. Sirap glukosa  
குளுகோஸ்

B. Gula  
சர்க்கரை

C. Olein/Minyak isirung kelapa sawit  
பனை எண்ணெய்

D. Pepejal susu  
பால்

E. Serbuk koko  
கொக்கோ



Tinjauan Pendidikan Kesihatan

<b>MODUL G : PENGUKURAN ANTROPOMETRI</b> <b>தொகுதி G : ஆந்தரோபோமெற்றிக் அளவீடுகள்</b>				
<b>Arahan : Bahagian ini akan diisi oleh pelajar di dalam kertas jawapan yang disediakan.</b> <b>கட்டளை: கீழ்க்காணும் பத்திரத்தை நிரப்புக.</b>				
G1	Tarikh pengukuran Antropometri ஆந்தரோபோமெற்றிக் அளவு எடுக்கப்பட்ட திகதி <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 20%;">Hari நாள்</td> <td style="width: 20%;">Bulan மாதம்</td> <td style="width: 60%;">Tahun ஆண்டு</td> </tr> </table>	Hari நாள்	Bulan மாதம்	Tahun ஆண்டு
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G2	Berat Badan உடல் எடை  G2a Berat 1 எடை 1 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> kg  G2b Berat 2 எடை 2 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> kg  Enggan diukur அளக்கவில்லை <input type="checkbox"/>			
G3	Tinggi உயரம்  G3a Tinggi 1 உயரம் 1 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> cm  G3b Tinggi 2 உயரம் 2 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> cm  Enggan diukur அளக்கவில்லை <input type="checkbox"/>			

## ADOLESCENT NUTRITION SURVEY 2017

马来西亚学生营养调查 2017




## Survey form/调查问卷

## INTRODUCTION / 简介

The survey was conducted to determine the nutritional status, eating habits, food intake, physical activity level, and the use of food labels and nutrition. Selected student from all over the country will also answer this questionnaire. 这项调查是为了解你的营养状况，饮食习惯，食物摄取，体能活动质量，和食品标签应用。在全国各地与你一样被选中的学生，也会回答这份问卷。

The information you provide will be used to develop better health programs for the future younger generation. 你所提供的资料将被用于规划更好的健康方案给予像你一样的年轻一代。

## Guide to filling survey forms/填写问卷指南

1. Your responses will be kept **CONFIDENTIAL**. Answer the questions based on what you know and what you do. There is no right or wrong answers.  
你提供的答案将被**保密**。请跟你所知道与你所做的来作答。答案没有对错之分。
2. Read the question carefully. Shade your answer on the answer sheet provided with a 2B pencil supplied.  
请仔细阅读问题。请使用所提供的2B铅笔并在准备好的答案纸上划黑作答。
3. How to shade the answer/如何划黑作答:  
Shade your answer like this  Not like this  or   
如此划黑作答 不是这样划 或这样
4. Only one answer for each question UNLESS there are other instructions.  
每题只能拥有一个答案，除非有其他指示。
5. If you do not understand, please raise your hand to ask question.  
如果你在作答期间不明白，请举手发问。
6. Kindly wait for instruction from your class facilitator once you have completed the survey.  
当你回答完毕，请等待班上协调员的指令。

THANK YOU FOR YOUR WILLINGNESS TO COMPLETE THE SURVEY

感谢你愿意回答问卷

*Enjinan Persekitaran Keluarga*

<b>MODULE A : PERSONAL INFORMATION</b>																	
<b>A组：个人资料</b>																	
<b>INSTRUCTION : Fill the student ID, date of birth and shade your answer on the answer sheet provided</b> 指示：填写学生编号，出生日期并在准备好的答案纸上划黑作答																	
A1	<table border="0"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td>State 州属</td> <td>Strata 区域</td> <td>School Category 学校类别</td> <td>School code 学校编号</td> <td>Class 班级</td> <td>Student 学生</td> <td colspan="2"></td> </tr> </table>									State 州属	Strata 区域	School Category 学校类别	School code 学校编号	Class 班级	Student 学生		
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A3	<p>A. Male/男 B. Female/女</p>																
A4	<p>A. Malay/马来人 B. Chinese/华人 C. Indian/印度人 D. Sabah indigenous/沙巴士著 E. Sarawak indigenous/沙撈越土著 F. Others/其他</p>																
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<b>MODULE B: Meal pattern</b>	
<b>组 B: 饮食习惯</b>	
<b>Instruction: Choose the answer and shade on the answer sheet provided</b>	
<b>指示: 请在准备好的答案纸上划圈作答</b>	
<b>B1</b>	<p>What is your school session? 请问你现在就读早上或下午班?</p> <p>A Morning session only/上午班 B Afternoon session only/下午班 C Morning and afternoon session/上午至下午班</p>
<b>B2</b>	<p>Normally, how many days in a week do you take breakfast (from 6.00AM till 8.00AM)? 你通常在一个星期内有几天会吃早餐(从早上6点到8点)?</p> <p>A 1 day/1天 B 2 days/2天 C 3 days/3天 D 4 days/4天 E 5 days/5天 F 6 days/6天 G 7 days/7天 H Not applicable / I do not take breakfast/不相关 / 没有吃早餐</p>
<b>B3</b>	<p>Normally, where do you get your breakfast from? 你通常从哪里获得早餐?</p> <p>A Prepared at home/在家准备 B Buy from school canteen/学校食堂购买 C Buy at restaurant or kiosk/餐馆或摊子购买 D Provided by the hostel/宿舍提供 E Others/其他途径 F I do not take breakfast/没有吃早餐</p>
<b>B4</b>	<p>If you do not take breakfast, what is the reason? 如果你没有吃早餐, 请问是什么原因?</p> <p>A No food/没有食物 B No appetite/没有胃口 C No time/没有时间 D On diet/ control body weight/节食/控制体重 E No money/没有钱 F Others/其他原因 G Not applicable/ because I take breakfast everyday 不相关/我每天都吃早餐</p>

**B5** Normally, how many days in a week do you eat and/or drink during school break time?  
你通常在一个星期内有几天会在学校休息节时吃食物与/或喝饮料?

- A 0 day/0天
- B 1 day/1天
- C 2 days/2天
- D 3 days/3天
- E 4 days/4天
- F 5 days/5天

**B6** Normally, where do you obtain the food?  
你通常从哪里获得该食物?

- A Bring from home/在家准备
- B Buy from school canteen/学校食堂购买
- C Buy at restaurant or kiosk/餐馆或摊子购买
- D Provided by hostel/宿舍提供
- E Others/其他途径
- F Not applicable/ I do not consume food and/or drink during school break time  
不相关/没有在学校休息节时吃食物与/或喝饮料

**B7** Normally, how many days in a week do you consume lunch (11.00AM till 3.00PM)?  
你通常在一个星期内有几天会吃午餐（从早上11点到下午3点）?

- A 1 day/1天
- B 2 days/2天
- C 3 days/3天
- D 4 days/4天
- E 5 days/5天
- F 6 days/6天
- G 7 days/7天
- H I do not take lunch/没有吃上午餐

**B8** Normally, where do you obtain the food?  
你通常从哪里获得该食物?

- A Prepared at home/在家准备
- B Buy from school canteen/学校食堂购买
- C Buy from restaurant or kiosk/餐馆或摊子购买
- D Provided by hostel/宿舍提供
- E Others/其他途径
- F Not applicable/ I do not take lunch/不相关/没有吃午餐

- B9** If you do not take lunch, what is the reason?  
如果你没有吃午餐，请问是什么原因？
- A No food/没有食物
  - B No appetite/没有胃口
  - C No time/没有时间
  - D On diet/ control body weight/节食/控制体重
  - E No money/没有钱
  - F Others/其他原因
  - G Not applicable/ I take lunch/不相关/ 我有吃午餐
- B10** Normally, how many days in a week do you have afternoon tea (3.00PM till 6.00PM)?  
你通常在一个星期内有几天会吃下午茶点（从下午3点到傍晚6点）？
- A 1 day/1天
  - B 2 days/2天
  - C 3 days/3天
  - D 4 days/4天
  - E 5 days/5天
  - F 6 days/6天
  - G 7 days/7天
  - H No afternoon tea/没有吃下午茶
- B11** Normally, where do you obtain the food?  
你通常从哪里获得下午茶点的食物？
- A Prepared at home/在家准备
  - B Buy from school canteen/学校食堂购买
  - C Buy from restaurant or kiosk/餐馆或摊子购买
  - D Provided by hostel/宿舍提供
  - E Others/其他途径
  - F Not having afternoon tea/没有吃下午茶点
- B12** Normally, how many days in a week do you have dinner(6.00PM till10.00PM)?  
你通常在一个星期内有几天会吃晚餐（从傍晚6点到晚上10点）？
- A 1 day/1天
  - B 2 days/2天
  - C 3 days/3天
  - D 4 days/4天
  - E 5 days/5天
  - F 6 days/6天
  - G 7 days/7天
  - H Not having dinner/没有吃晚餐

- B13** Normally, where do you obtain the food?  
通常从哪获得该食物?
- A Prepared at home/在家准备
  - B Buy from restaurant or kiosk/餐馆或摊子购买
  - C Provided by hostel/宿舍提供
  - D Others/其他途径
  - E Not applicable/ I do not take dinner/不相关/ 没有吃晚餐
- B14** If you do not take dinner, what is the reason?  
如果你没有吃晚餐，请问是什么原因?
- A No food/没有食物
  - B No appetite/没有胃口
  - C No time/没有时间
  - D On diet/节食
  - E No money/没有钱
  - F Others/其他原因
  - G Not applicable/ I take dinner/不相关/ 有吃晚餐
- B15** For the past one week, how often do you take heavy meals after dinner? (Example: nasilemak, roti canai, fried mee, burger, fried chicken, instant noodle and etc.This does not include light snacks, eg 2 pieces of biscuit and/or one glass of milk)  
在上周里面，有几天你在完晚饭后会吃难消化的食物？（例：椰浆饭，印度煎饼，炒面，汉堡包，炸鸡，快熟面等。这不包括小吃，例如2块饼干和/或一杯牛奶）
- A 1 day/1天
  - B 2 days/2天
  - C 3 days/3天
  - D 4 days/4天
  - E 5 days/5天
  - F 6 days/6天
  - G 7 days/7天
  - H I do not take heavy meals after dinner/晚餐后不再吃东西
- B16** Where do you take the heavy meals?  
你从哪里享用该食物?
- A Home/家里
  - B Restaurant/ kiosk/餐馆或摊子
  - C Hostel/宿舍
  - D Others/其他地方
  - E Not applicable/ I do not take heavy meals/不相关/ 晚餐后不再吃东西

- B17** Normally, how many days in a week do you eat fast food bought from fast food restaurant, such as burger, pizza, fried chicken, French fries, nugget and etc?  
你通常在一个星期内有几天会吃从快餐店购买的食物如汉堡包, 披萨饼, 炸鸡, 薯条, 鸡肉块等等?
- A 1 day/1天
  - B 2 days/2天
  - C 3 days/3天
  - D 4 days/4天
  - E 5 days/5天
  - F 6 days/6天
  - G 7 days/7天
  - H No fast food/没有吃快餐
- B18** How often do you bring food to school?  
你可否有从家里携带便当/食物到学校?
- A Everyday/每天
  - B Occasionally/偶尔 (有时候会)
  - C Never/没有携带
- B19** What is the usual packed meal that you bring to school? (Can choose **ONE** or **TWO** answer(s) only)  
通常会带什么食物到学校? (只能选择一个或两个答案)
- A *Nasi lemak*/fried rice/mixed rice  
椰浆饭 / 炒饭 / 饭菜
  - B Noodle / Vermicelli / KuehTeow  
面 / 米粉 / 河粉
  - C Bread / Bun / Sandwich  
面包 / 馒头 / 三文治
  - D Nugget / Sausage / Burger  
鸡肉块 / 香肠 / 汉堡包
  - E Biscuit/饼干
  - F Fruits/水果
  - G Others/其他
  - H I do not bring packed meal/没有携带食物
- B20** How often do you bring drink to school?  
你可否有从家里携带饮料到学校?
- A Everyday/每天
  - B Occasionally/偶尔 (有时候会)
  - C Never/没有携带



- B21** What is the usual drink that you bring to school?(Can choose **ONE** or **TWO** answer(s) only)  
通常会带什么饮料到学校? (只能选择一个或两个答案)
- A Plain water/白开水
  - B Flavored water/packed drink/syrup drink/tea/coffee/Milo  
有味饮料 / 包装饮料 / 糖浆饮料 / 茶 / 咖啡 / 美禄
  - C Carbonated drink/汽水
  - D Milk/ cultured drink/奶/ 酸奶饮品 (优格)
  - E Others/其他
  - F I don't bring drink to school/没有携带饮料
- B22** Normally, where do you mostly spend your pocket money?  
你最常把零用钱花在哪一方面?
- A Buy food and/ or drink/购买食物X或饮料
  - B Buy stationery/购买文具
  - C Saving/储蓄
  - D Others/其他
  - E I do not bring pocket money to school/没有零用钱
- B23** How often do you eat outside in a week?Not included eating in the school and hostel?  
你通常在一个星期内有几天会在外用餐? 不包括在学校和宿舍?
- A 1 time/1次
  - B 2 times/2次
  - C 3 times/3次
  - D 4 times/4次
  - E 5 times/5次
  - F 6 times/6次
  - G 7 times or more/7次或以上
  - H Never/没有在外面用餐
- B24** What kind of snack foods that you always eat?(Can choose **ONE** or **TWO** answer(s) only)  
你最常吃的零食是什么? (只能选择一个或两个答案)
- A Bread / Bun / Sandwich/面包 / 馒头 / 三文治
  - B French fries/薯条
  - C Biscuit/饼干
  - D Fruits/水果
  - E Nuts/花生
  - F Fish cracker/炸鱼饼/虾饼
  - G Ice cream/冰淇淋
  - H I do not take snack food/没有吃零食

- B25** How often do you take snack foods in a week?  
你在一个星期内吃多少次零食?
- A 1 time/1次
  - B 2 times/2次
  - C 3 times/3次
  - D 4 times/4次
  - E 5 times/5次
  - F 6 times/6次
  - G 7 times or more/7次或以上
  - H Never take snack food before/没有吃零食
- B26** What types of food and/or drinks that you always buy out of school area?(Can choose **ONE** or **TWO** answer(s) only)  
你从学校范围外买些什么类型的食物和/或饮料? (只能选择一个或两个答案)
- A Candy/chocolate/糖果 / 巧克力
  - B French fries/ nugget / sausage/薯条 / 鸡肉块 / 香肠
  - C Flavoured drink/ carbonated drink/各种口味饮料 / 汽水
  - D Pickles/腌制食物
  - E Snack food/零食
  - F Fish cracker/炸鱼饼/虾饼
  - G Ice cream/冰淇淋
  - H Never take snack food outside the school area/没有买学校范围外的食物
- B27** Within a week, how often do you buy food and/or drink outside school compound?  
在一星期内, 你可否有从学校范围外买食物和/或饮料?
- A 1 time/1次
  - B 2 times/2次
  - C 3 times/3次
  - D 4 times/4次
  - E 5 times/5次
  - F 6 times/6次
  - G 7 times or more/7次或以上
  - H Never/没有购买
- B28** Which media source(s) that most affect your dietary pattern? (Can choose **ONE** or **TWO** answer (s) only)/  
什么媒体最影响你的食物选择? (只能选择一个或两个答案)
- A Social media (example : Surf Internet / YouTube / Facebook / Instagram, Twitter)  
社交网站 (例: 浏览网站 / 视频网站 / 面子书)
  - B Television/电视机
  - C Radio/电台
  - D Printed media (Example: magazine, newspaper, billboard, brochure, catalogue)  
平面媒体 (例子: 杂志, 报章, 广告牌, 传单, 购物目录)
  - E Not affected/没有被影响

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<b>MODULE C : PHYSICAL ACTIVITY</b>						
<b>C组：体能活动</b>						
<b>Instruction : Choose the answer and shade on the answer sheet provided</b>						
<b>指示：请在准备好的答案纸上划黑作答</b>						
<b>C1 Physical activity during leisure time: Are you doing the activities listed below during the last 7 days (last week). If YES, how many times?</b>						
<b>休闲体能活动：在过去的7天（上周）你有做出以下列出的哪些活动。如果有，请问多少次？</b>						
	<b>Activity/活动</b>	<b>Never/ 没有</b>	<b>1-2 times/ 1-2次</b>	<b>3-4 times/ 3-4次</b>	<b>5-6 times/ 5-6次</b>	<b>7 times or more/ 7次或以上</b>
a	Rope skipping/跳绳	A	B	C	D	E
b	Rowing/ Canoeing/划艇	A	B	C	D	E
c	Silat / Karate / Taekwondo 马来武术/空手道/跆拳道	A	B	C	D	E
d	Chasing game/追逐游戏	A	B	C	D	E
e	Brisk walking/步行运动	A	B	C	D	E
f	Cycling/骑脚踏车	A	B	C	D	E
g	Jogging / Running/慢跑 / 赛跑	A	B	C	D	E
h	Aerobics/有氧体操	A	B	C	D	E
i	Swimming/游泳	A	B	C	D	E
j	Baseball/棒球	A	B	C	D	E
k	Dancing/跳舞	A	B	C	D	E
l	Rugby/橄榄球	A	B	C	D	E
m	Badminton/羽毛球	A	B	C	D	E
n	Hockey/曲棍球	A	B	C	D	E
o	Volleyball/排球	A	B	C	D	E
p	Basketball / Netball/篮球	A	B	C	D	E
q	Sepak takraw/藤球	A	B	C	D	E
r	Football / Futsal/足球	A	B	C	D	E
s	Ping pong/乒乓球	A	B	C	D	E

- C2** During physical education class in the last 7 days, how often are you in an active condition (playing, running, throwing, jumping)?  
在过去的7天，在体育课活动期间，你是否非常活跃（玩耍，奔跑，投球，跳跃）？
- A I do not attend the physical education class/我不参与体育课  
B Very rare/级少数  
C Occasionally/偶尔(有时候会)  
D Quite often/经常  
E Always/常常
- C3** What do you usually do **during break time in the school** for the last 7 days?  
在过去的7天，你都在**学校休息课**时做些什么？
- A Sitting down (chatting, reading, doing homework)/坐下(聊天，阅读，做功课)  
B Standing or walking/站立或步行  
C Running or playing for a short while/奔跑或偶尔玩耍  
D Running and playing for a short while/奔跑和偶尔玩耍  
E Running and playing all the time/奔跑和经常玩耍
- C4** What are the activities that you normally do **during lunch time** for the last 7 days (apart from eating)?  
在过去的7天，除了坐下吃午餐外，你都在**吃午餐的时候**做些什么？
- A Sitting down (chatting, reading, doing homework)/坐下(聊天，阅读，做功课)  
B Standing or walking/站立或步行  
C Running or playing for a short while/奔跑或偶尔玩耍  
D Running and playing for a short while/奔跑和适量的玩耍  
E Running and playing all the time/奔跑和经常玩耍
- C5** In the last 7 days, how many days did you spend playing sports, dance or playing **actively immediately after school hours**?  
在过去的7天，你有几天是**直接在放学后**运动，跳舞，或非常活跃的玩耍？
- A Never/没有  
B 1 day/1天  
C 2 or 3 days/2或3天  
D 4 days/4天  
E 5 days/5天
- C6** In the last 7 days, how many days did you play sports, dance or play **actively in the evening**?  
在过去的7天，你有几天是在**下午时间**运动，跳舞，或非常活跃的玩耍？
- A Never/没有  
B 1 day/1天  
C 2 or 3 days/2或3天  
D 4 or 5 days/4或5天  
E 6 or 7 days/6或7天

- C7** How many times have you been involved with sport activities, dancing or engage in active games during last weekend?  
在上个周末，你有多少次参与运动，跳舞，或活跃的课外活动？
- A Never/没有
  - B 1 time/1次
  - C 2 or 3 times/2或3次
  - D 4 or 5 times/4或5次
  - E 6 times or more/6次或以上
- C8** Which of the following statements describe you in the last 7 days?  
以下哪项正是描述你在过去的7天的行为？
- A I use all or most of my spare time with a mild activity/  
我用全部或大部分空闲的时间做些不劳累的活动
  - B I occasionally (1-2 times per week) do physical activity during my spare time (example: involve in sport activities, running, swimming, cycling, aerobic activity)/  
在空闲的时候，我偶尔（每周1-2次）会参与课外活动（例：运动，赛跑，跳舞，游泳，骑脚踏车，有氧运动）
  - C I sometimes (3-4 times per week) do physical activity during my spare time(example: involve in sport activities, running, swimming, cycling, aerobic activity)/  
在空闲的时候，我有时（每周3-4次）会参与课外活动（例：运动，赛跑，跳舞，游泳，骑脚踏车，有氧运动）
  - D I often (5-6times per week) do physical activity during my spare time (example: involve in sport activities, running, swimming, cycling, aerobic activity)/  
在空闲的时候，我经常（每周5-6次）会参与课外活动（例：运动，赛跑，跳舞，游泳，骑脚踏车，有氧运动）
  - E I regularly (7times or more per week) do physical activity during my spare time (example: involve in sport activities, running, swimming, cycling, aerobic activity)/  
在空闲的时候，我常常（每周7次或以上）会参与课外活动（例：运动，赛跑，跳舞，游泳，骑脚踏车，有氧运动）

**C9** Highlight the frequency of your activity (such as sports, playing, dancing, or any other physical activity) for each day during the last one week.

上个星期的每一天，你有多少次参与课外活动（体育，玩耍，跳舞或其他课外活动）

Day/日期		No activity/ 没有活动	Occasionally (1-2 times)/ 偶尔 (1-2 次)	Sometimes (3-4 times) / 有时 (3-4 次)	Often (5-6 times/ 经常 (5-6 次)	Regularly (7 times or more)/ 常常 (7 次或以)
a	Monday/ 星期一	A	B	C	D	E
b	Tuesday/ 星期二	A	B	C	D	E
c	Wednesday/ 星期三	A	B	C	D	E
d	Thursday/ 星期四	A	B	C	D	E
e	Friday/ 星期五	A	B	C	D	E
f	Saturday/ 星期六	A	B	C	D	E
g	Sunday/ 星期日	A	B	C	D	E

- C10** For the past week, are you sick, or are there any things that prevent you from doing regular physical activity?  
在上个星期, 你是否生病或因其他原因而导致你不能参与课外活动吗?
- A Yes/是  
B No/不是
- C11** During **weekend**, do you watch television and/or use computer and/or play video games?  
在**周末**, 你是否有看电视和/或使用电脑和/或玩电子游戏机 (example/如: PSP, Playstation, Gameboy and others)?
- A Yes/是  
B No/不是
- C12** How long do you watch television and/or use computer and/or play video games during **weekend**?  
在**周末**, 你花多少时间在看电视和/或使用电脑和/或玩电子游戏机?
- A Less than 1 hour per day/一天少过 1 小时  
B 1 to 2 hours per day/一天 1 至 2 小时之间  
C 2 to 3 hours per day/一天 2 至 3 小时之间  
D 3 to 4 hours per day/一天 3 至 4 小时之间  
E More than 4 hours per day/一天超过 4 小时
- C13** During **school day**, do you watch television and/or use computer and/or playing video games?  
在**上学期间**, 你是否有看电视和/或使用电脑和/或玩电子游戏机(example/如: PSP, PlayStation, Gameboy and others)?
- A Yes/是  
B No/不是
- C14** How long do you watch television and/or use computer and/or play video games on **school days**?  
在**上学期间**, 你花多少时间在看电视和/或使用电脑和/或玩电子游戏机?
- A Less than 1 hour per day/一天少过 1 小时  
B 1 to 2 hours per day/一天 1 至 2 小时之间  
C 2 to 3 hours per day/一天 2 至 3 小时之间  
D 3 to 4 hours per day/一天 3 至 4 小时之间  
E More than 4 hours per day/一天超过 4 小时

**MODULE D : PERCEPTION OF WEIGHT MANAGEMENT****D 组 : 体重管理的自我观点****INSTRUCTION : Choose the answer and shade on the answer sheet provided.****指示 : 请在准备好的答案纸上划圈作答**

- D1** At the present time, you think you are:  
目前, 你觉得你:
- A Significant underweight/体重非常不足
  - B Underweight/体重不足
  - C Has appropriate body weight/拥有适当的体重
  - D Overweight/体重过重
  - E Obese/肥胖
- D2** What are you doing to your body weight?  
你对你的体重做了些什么?
- A I am trying to reduce my body weight/我正在努力减轻自己的体重
  - B I am trying to increase my body weight/我正在努力增加自己的体重
  - C I am not doing anything to my body weight/我什么也没做
  - D I am maintaining my body weight/我正在维持自己的体重
- D3** If you intend to **lose body weight**, what are the main factor that motivate you to do so?/如果你想**减肥**, 是什么主要因素驱使你这样做呢?
- A Health/健康
  - B Beauty/漂亮
  - C Increase self-confidence/提高自信
  - D To have more friends/结交更多朋友
  - E Does not intend to lose body weight/没有想过减肥
- D4** If you intend to **lose body weight**, what is the preferred option?  
如果你想**减肥**, 什么方法是你的首选?
- A Exercise/运动
  - B Reduce consumption of high fat foods/减少吃油腻的食物(Example/例子: fried food/煎炸食物)
  - C Reduce intake of sugary foods/减少吃甜食
  - D Increase intake of vegetables and fruits/多吃蔬菜和水果
  - E Skip main meals/不吃正餐 (breakfast/早餐, lunch/午餐, dinner/晚餐)
  - F Taking diet pills/ use slimming cream/吃减肥药/用减肥霜
  - G Fasting/禁食
  - H Get professional advise/征求专业服务
  - I Does not intend to lose body weight/没有想过减肥
- D5** If you intend to **increase body weight**, what are the main factor that motivate you to do so?  
如果你想**增肥**, 是什么主要因素驱使你这样做呢?
- A Healthy/健康
  - B Beauty/漂亮
  - C Increase self-confidence/提高自信
  - D To have more friends/结交更多朋友
  - E Does not intend to increase body weight/没有想过增肥
- D6** If you intend to **increase body weight**, what is the preferred option?  
如果你想**增肥**, 什么方法是你的首选?
- A Increase the quantity of food consumed/吃更多的食物
  - B Taking supplement (Additional foods such as milk, vitamin)/吃补品 (如奶, 维生素补品)
  - C Take high-calorie foods/吃高卡路里的食物
  - D Others/其他
  - E Does not intend to increase body weight/没有想过增肥



**MODULE E: SUPPLEMENT INTAKE****E 组：食用营养补助品****Instruction: Choose the answer and shade on the answer sheet provided****指示：请在准备好的答案纸上划黑作答**

- E1** Are you taking any vitamin supplement/ minerals?  
 你有在食用维生素/矿物质的补助品吗？  
 A Yes/有  
 B No/没有  
 (If No, please answer 'I DON'T TAKE SUPPLEMENT' at question E2, E3, danE4  
 (如果没有，请在E2, E3 和 E4 回答没有食用补助品))
- E2** What type of vitamin supplement/ minerals that you usually take?  
 你在食用什么维生素/矿物质补助品？  
 A Multivitamin/多元维生素  
 B Vitamin C/维生素 C  
 C Iron supplement (Ferum)/铁质  
 D Others/其他  
 E I do not take supplement/没有食用补助品
- E3** What is the reason for you to take vitamin supplement/ minerals?  
 是什么原因使你在食用维生素/矿物质补助品？  
 A Prescribed by doctor/医生指示  
 B Advised by parent/父母要求  
 C Self-awareness/自我意识  
 D Friend influence/朋友影响  
 E Others/其他  
 F I do not take supplement/没有食用补助品
- E4** How often do you take vitamin supplement / minerals?  
 你如何食用该维生素/矿物质补助品？  
 A Everyday/每天  
 B 5-6 times per week/一星期5至6次  
 C 3-4 times per week/一星期3至4次  
 D 1-2 times per week/一星期1至2次  
 E I do not take supplement/没有服用补助品
- E5** Are you taking any **food supplement**?  
 你有在食用食物补助品吗？  
 A Yes/有  
 B No/没有  
 (If NO, please answer 'I DON'T TAKE SUPPLEMENT' at question E6, E7, danE8)  
 (如果没有，请在E6, E7 和 E8 回答没有食用补助品)

**E6** What kind of food supplement that you usually take?  
你在食用什么食物补助品？

- A Spirulina/螺旋藻
- B Fish oil/鱼油
- C Honey/蜜糖或蜜糖制品
- D Chicken essence/鸡精
- E Others/其他
- F I do not take supplement/没有食用补助品

**E7** What is the reason for you to take food supplement?  
是什么原因使你在食用食物补助品？

- A Prescribed by doctor/医生指示
- B Advised by parent/父母要求
- C Self-awareness/自我意识
- D Friend influence/朋友影响
- E Others/其他
- F I do not take supplement/没有服用补助品

**E8** How often do you take food supplement?  
你如何食用该维生素/矿物质补助品？

- A Everyday/每天
- B 5-6 times per week/一星期 5 至 6 次
- C 3-4 times per week/一星期 3 至 4 次
- D 1-2 times per week/一星期 1 至 2 次
- E I do not take supplement/没有服用补助品

**MODULE F: NUTRITION AND FOOD LABELLING****F 组：食品标签（只限于中学生作答）****Instruction: Choose the answer and shade on the answer sheet provided****指示：请在准备好的答案纸上划圈作答**

**F1** Do you read food label when buying or receiving food/drink?  
 当你正在购买或接受食品/饮料的时候，你会否阅读食品标签？

A. Yes, every time/每次都会

B. Yes, sometimes/偶尔会

C. No/不会

(Straight to question F3 and answer till question F10/  
 请直接跳去回答问题 F3，并继续回答至 F10)

(Please answer question F2 and question F5 till F8/  
 请回答问题 F2，并直接跳去 F5 继续回答至 F8)

**F2** If you do not read food labels, specify the reason? **You may choose more than one answer**  
 如果你没有阅读食品标签，请列明原因。你可以选择多个答案

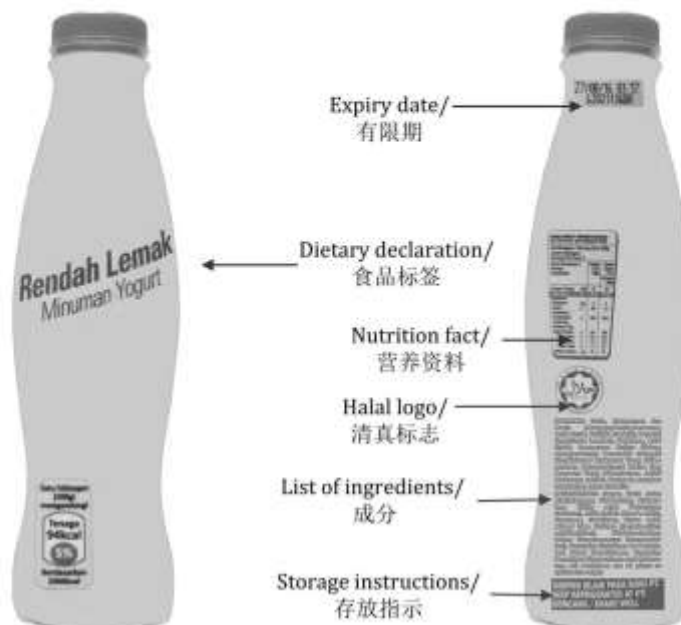
Reasons for not reading food labels/ 没有阅读食品标签的原因	
<b>A</b>	Small printing font/字体太小
<b>B</b>	Do not understand food labels/不明白
<b>C</b>	Not interesting/不感兴趣
<b>D</b>	Do not know the importance/不懂其重要性
<b>E</b>	No time/没有时间
<b>F</b>	Already know the information/已经知道相关资料

**F3** What kind of information do you read from the food label? **You may choose more than one answer.**  
 你会从食物营养标签上阅读哪些营养资料？你可以选择多个答案

Nutrition fact information/营养资料	
<b>A</b>	Energy content/日能
<b>B</b>	Carbohydrate/sugar content/碳水化合物/糖含量
<b>C</b>	Fat content/脂肪含量
<b>D</b>	Protein content/蛋白质含量
<b>E</b>	Salt/ sodium content/钠含量
<b>F</b>	Vitamin content/维生素含量
<b>G</b>	Mineral content/矿物质含量
<b>H</b>	Fiber/纤维

**F4** Based on the picture of drink sample below, what kind of information do you read?  
**You can choose more than one answer**

根据以下饮品为例，你会阅读以下哪些资料？您可以选择多个答案



Type of Information/食品资料	
<b>A</b>	Expiry date/有限期
<b>B</b>	Dietary declaration/食品标签
<b>C</b>	Nutrition fact/营养资料
<b>D</b>	Halal logo/清真标志
<b>E</b>	List of Ingredients/成分
<b>F</b>	Storage instruction/存放指示

*English/Chinese/Chinese*

Based on nutrition fact on **Packed Drink XYZ** shown below, please read and state whether the statement is correct or wrong

根据以下**XYZ包装饮料**的食品说明。请阅读明白并确定下列陈述正确与否

Nutrition Facts for Drink XYZ/ XYZ 包装饮料食品说明		
Serving size: 食用分量: 250 ml / 毫升 Serving per box/每包装所含食用份量: 1		
	Every 100 ml/ 每 100 毫升	Every serving 250 ml/ 每食用份量 250 毫升
Energy/能量 (kcal/千卡)	56	140
Carbohydrate/碳水化合物 (g/克)	10.9	27.3
Total sugar/总糖量 (g/克)	10.6	26.5
Protein/蛋白质 (g/克)	0	0
Fat/脂肪 (g/克)	0	0

**F5** If I drink 100ml of this drink, it provides 56 kcal of energy.  
如果我喝下这100毫升的饮料，它将提供56千卡能量。

- A True/正确
- B False/不正确
- C Don't know.不知道

**F6** If I drink 1 box of this packed drink, I obtain 26.5 gram of sugar.  
如果我喝下这包饮料，就等于我摄取了26.5克糖。

- A True/正确
- B False/不正确
- C Don't know/不知道

Based on the energy content from the front part of label (shown below), please indicate whether the following statement is true or false.

根据以下前面的能量摄取标签(*front of pack labelling*), 请确定下列陈述正确与否

One serving/每食用份量  
Contain/含有 250 ml/毫升



Base on/根据  
2000 kcal/千卡


- F7** Energy for 2 serving of this food is 140 kcal  
两份食用份量将提供140千卡的能量
- A True/正确
  - B False/不正确
  - C Don't know/不知道
- F8** If I drink one serve of this food, it provides 7% energy from 2000 calories  
如果我喝了一份食用份量, 它将从 2000 千卡中提供 7%的能量。
- A True/正确
  - B False/不正确
  - C Don't know/不知道

**Product Ice Cream A**  
冰淇淋 A 产品

**List of ingredients/成分:**

Sugar, Olein/Palm kernel, Milk solids,  
Glucose syrup, Cocoa powder.

糖, 精油/棕榈仁油, 乳固体, 葡萄糖浆,  
可可粉



**F9** What ingredient that is mostly used in this ice cream?  
在这冰淇淋内, 什么成分是最高的?

- A. Milk solids/乳固体
- B. Glucose syrup/葡萄糖浆
- C. Sugar/糖
- D. Olein / Palm kernel oil/精油/棕榈仁油
- E. Cocoa powder/可可粉

**F10** What ingredient that is least used in this ice cream?  
在这冰淇淋内, 什么成分是最低的?

- A. Glucose syrup/葡萄糖浆
- B. Sugar/糖
- C. Olein/Palm kernel oil/精油/棕榈仁油
- D. Milk solids/乳固体
- E. Cocoa powder/可可粉

<b>MODULE G : ANTHROPOMETRIC MEASUREMENT</b>													
<b>G 组： 人体测量</b>													
<i>Instruction: This section will be completed by the student in the answer sheets provided</i> 指示：在这环节，学生将在所准备的答案纸上作答													
G1	Anthropometry measurement date/测量日期: <table border="1" style="margin-left: 20px;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> <td style="width: 30px; height: 20px;"></td> </tr> <tr> <td colspan="2" style="text-align: center;">Day/日期</td> <td colspan="2" style="text-align: center;">Month/月份</td> <td colspan="2" style="text-align: center;">Year/年份</td> </tr> </table>							Day/日期		Month/月份		Year/年份	
Day/日期		Month/月份		Year/年份									
G2	Body weight/体重												
G2a	Weight 1/体重1 <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> : <input style="width: 30px; height: 20px;" type="text"/> kg/公斤												
G2b	Weight 2/体重2 <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> : <input style="width: 30px; height: 20px;" type="text"/> kg/公斤												
	<b>Refuse to be measured</b> 不愿被测量 <input style="width: 30px; height: 40px;" type="text"/>												
G3	Body height/身高												
G3a	Height 1/身高 1 <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> : <input style="width: 30px; height: 20px;" type="text"/> cm/厘米												
G3b	Height 2/身高 2 <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> : <input style="width: 30px; height: 20px;" type="text"/> cm/厘米												
	<b>Refuse to be measured</b> 不愿被测量 <input style="width: 30px; height: 40px;" type="text"/>												





**iku**   

**INSTITUT KESIHATAN UMUM  
KEMENTERIAN KESIHATAN MALAYSIA**  
Jalan Bangsar  
50590 Kuala Lumpur









## Appendix 8: Consent Form

## Parents Consent Form

Borang Persetujuan Ibu Bapa/Penjaga NHMS 2017

**RISALAH MAKLUMAT IBU BAPA/ PENJAGA (RESPONDEN BAWAH 18 TAHUN)****1. Tajuk:**

Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017

**2. Nama Penyelidik dan Institusi:**

- i. Dr. S Maria Binti Awaluddin, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia
- ii. Puan Ruhaya Binti Salleh, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia
- iii. Dr. Mohd Kamal Ariff Bin Abdul Ghani, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia

**3. Nama Penaja:**

Kementerian Kesihatan Malaysia

**4. Pengenalan:**

Kementerian Kesihatan Malaysia sedang menjalankan Tinjauan Kebangsaan Kesihatan dan Morbiditi 2017 pada tahun ini. Terdapat dua fokus utama dalam kajian ini iaitu Tinjauan Kesihatan Remaja dan Tinjauan Pemakanan Remaja. Maklumat di bawah akan menjelaskan hal-hal berkenaan tinjauan tersebut untuk anda membenarkan anak anda menyertai tinjauan ini.

Adalah penting untuk anda memahami mengapa tinjauan ini dilakukan dan apa yang perlu anak anda lakukan. Sila ambil masa yang secukupnya untuk membaca dengan teliti penerangan yang diberi sebelum anda memberi persetujuan untuk anak anda menyertai tinjauan ini. Jika anda mempunyai sebarang kemusykilan ataupun memerlukan maklumat lanjut, anda boleh bertanya dengan mana-mana ahli kumpulan tinjauan ini.

Setelah anda memahami maklumat tinjauan ini dan memberi keizinan untuk anak anda mengambil bahagian, anda perlu menandatangani Borang Persetujuan Ibu Bapa/ Penjaga (**Salinan Ibu-Bapa/Penjaga & Salinan Penyelidik**) yang disertakan bersama-sama risalah ini. Tuan/Puan mempunyai masa selama tujuh (7) hari untuk membuat keputusan bagi penyertaan anak Tuan/Puan dalam kajian ini. Borang persetujuan yang telah ditandatangani akan dikumpul oleh pasukan penyelidik sebelum pengumpulan data dijalankan. Penyertaan anak anda dalam tinjauan ini adalah secara sukarela dan anak anda boleh menarik diri pada bila-bila masa. Anak anda boleh tidak menjawab mana-mana soalan atau menarik diri dari pemeriksaan yang disebutkan sekiranya tidak mahu. Keengganan anak anda untuk mengambil bahagian atau menarik diri tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anak anda.

Tinjauan ini ditaja sepenuhnya oleh Kementerian Kesihatan Malaysia dan telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

**5. Apakah tujuan tinjauan ini dilakukan?**

Tujuan tinjauan ini dijalankan adalah untuk memperoleh maklumat berkenaan kesihatan dan faktor pelindung serta menilai status pemakanan, corak pengambilan makanan dan corak aktiviti fizikal dalam kalangan remaja berumur 10 hingga 17 tahun. Maklumat yang diperolehi ini akan dikaji dan dinilai bagi membantu penilaian keberkesanan strategi yang dilaksanakan di peringkat sekolah dan untuk meningkatkan kesihatan remaja.

**6. Apakah yang perlu anak saya lalui/lakukan sekiranya bersetuju untuk menyertai tinjauan ini?**

Memberi respon terhadap soalan-soalan kaji selidik yang perlu dijawab oleh anak anda dan juga pengambilan ukuran berat dan tinggi yang akan dilakukan oleh pasukan penyelidik.

**7. Apakah tanggungjawab anak saya sewaktu menyertai tinjauan ini?**

Adalah penting untuk anak anda menjawab kesemua soalan yang ditanya oleh ahli penyelidik dengan lengkap. Menyertai tinjauan ini tidak memerlukan anda mengeluarkan sebarang perbelanjaan.

**8. Apakah risiko dan kesan-kesan sampingan menyertai tinjauan ini?**

Tiada risiko terhadap anak anda sekiranya menyertai tinjauan ini memandangkan tiada kaedah yang invasif atau merbahaya digunakan.



**9. Apakah manfaatnya anak saya menyertai tinjauan ini?**

Tinjauan ini tidak memberikan sebarang saguhati atau kesan kesihatan secara langsung apabila anak anda menyertai tinjauan ini. Namun, segala maklumat yang diperolehi daripada tinjauan ini akan dapat membantu penggubal dasar untuk merancang dan menambahkan program sedia ada untuk golongan remaja di Malaysia.

**10. Adakah maklumat perubatan anak saya akan dirahsiakan?**

Segala maklumat anak anda yang diperolehi dalam tinjauan ini akan disimpan dan dikendalikan secara sulit, bersesuaian dengan peraturan-peraturan dan/atau undang-undang yang berkenaan. Hanya penyelidik, peninjau yang berkecualan, auditor, dan pihak berkuasa yang berkaitan kajian ini sahaja mempunyai akses kepada maklumat yang anak anda berikan. Sekiranya hasil tinjauan ini diterbitkan atau dibentangkan kepada orang ramai, identiti anak anda tidak akan didedahkan tanpa kebenaran anda terlebih dahulu.

**11. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?**

Sekiranya anda mempunyai sebarang soalan mengenai tinjauan ini atau memerlukan keterangan lanjut, Tuan/Puan boleh hubungi penyelidik, Dr. S Maria Awaluddin, Puan Ruhaya Salleh dan Dr. Mohd Kamal Ariff Abdul Ghani di Institut Kesihatan Umum, Jalan Bangsar, Kuala Lumpur di talian 03-22979400 untuk penjelasan lebih lanjut.

Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anak anda sebagai responden dalam tinjauan ini, sila hubungi Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan (MREC), Kementerian Kesihatan Malaysia di talian 03-22874032.

**BORANG PERSETUJUAN IBU BAPA/ PENJAGA (Salinan Ibu Bapa/Penjaga)**

**Tajuk kajian : Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017**

Dengan menandatangani di bawah (Salinan Ibu Bapa/Penjaga dan Salinan Penyelidik), saya mengesahkan bahawa:

	Sila tandakan ✓ di dalam kotak
1. Saya telah diberi maklumat tentang tinjauan di atas dan saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini.	<input type="checkbox"/>
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan anak saya dalam tinjauan ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	<input type="checkbox"/>
3. Saya faham bahawa penyertaan anak saya adalah secara sukarela dan boleh menarik diri daripada tinjauan ini pada bila-bila masa tanpa memberi sebarang sebab.	<input type="checkbox"/>
4. Saya memahami risiko dan manfaat dari tinjauan ini dan saya memberi keizinan secara sukarela untuk anak saya mengambil bahagian dalam tinjauan. Saya faham bahawa anak saya mesti mengikuti arahan yang berkaitan dengan penyertaannya dalam tinjauan ini.	<input type="checkbox"/>
5. Saya akan menerima satu salinan maklumat tinjauan/borang persetujuan ibu bapa/penjaga termaklum ini yang telah ditandatangani dan bertarikh.	<input type="checkbox"/>

Saya, \_\_\_\_\_ **memberi/tidak memberi keizinan\*** untuk anak/jagaan saya bernama \_\_\_\_\_ dari kelas \_\_\_\_\_ mengambil bahagian di dalam Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017 sepertimana yang telah dimaklumkan. (**\*Potong yang tidak berkenaan**)

(Tandatangan)  
 Nama Ibubapa/Penjaga\* : \_\_\_\_\_  
 Nombor K/P : \_\_\_\_\_  
 Tarikh : \_\_\_\_\_

**BORANG PERSETUJUAN IBU BAPA/ PENJAGA (Salinan Penyelidik)****Tajuk kajian : Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017**

Dengan menandatangani di bawah **(Salinan Ibu Bapa/Penjaga dan Salinan Penyelidik)**, saya mengesahkan bahawa:

	Sila tandakan <input type="checkbox"/> di dalam kotak
1. Saya telah diberi maklumat tentang tinjauan di atas dan saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini.	<input type="checkbox"/>
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan anak saya dalam tinjauan ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	<input type="checkbox"/>
3. Saya faham bahawa penyertaan anak saya adalah secara sukarela dan boleh menarik diri daripada tinjauan ini pada bila-bila masa tanpa memberi sebarang sebab.	<input type="checkbox"/>
4. Saya memahami risiko dan manfaat dari tinjauan ini dan saya memberi keizinan secara sukarela untuk anak saya mengambil bahagian dalam tinjauan. Saya faham bahawa anak saya mesti mengikuti arahan yang berkaitan dengan penyertaannya dalam tinjauan ini.	<input type="checkbox"/>
5. Saya akan menerima satu salinan maklumat tinjauan/borang persetujuan ibu bapa/penjaga termaklum ini yang telah ditandatangani dan bertarikh.	<input type="checkbox"/>

Saya, \_\_\_\_\_ **memberi/tidak memberi keizinan\*** untuk anak/jagaan saya bernama \_\_\_\_\_ dari kelas \_\_\_\_\_ mengambil bahagian di dalam Tinjauan Kebangsaan Kesihatan dan Morbiditi 2017 sepertimana yang telah dimaklumkan. **(\*Potong yang tidak berkenaan)**

(Tandatangan)

Nama Ibubapa/Penjaga\* :

Nombor K/P :

Tarikh :

## Students Consent Form

Borang Persetujuan Responden (Bawah 18 Tahun) NHMS 2017

### RISALAH MAKLUMAT RESPONDEN (BAWAH 18 TAHUN)

#### 1. Tajuk:

Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017

#### 2. Nama Penyelidik Utama dan Institusi:

- i. Dr. S Maria Binti Awaluddin, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia
- ii. Puan Ruhaya Binti Salleh, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia
- iii. Dr. Mohd Kamal Ariff Bin Abdul Ghani, Institut Kesihatan Umum, Kementerian Kesihatan Malaysia

#### 3. Nama Penaja:

Kementerian Kesihatan Malaysia

#### 4. Pengenalan:

Kementerian Kesihatan Malaysia sedang menjalankan Tinjauan Kebangsaan Kesihatan dan Morbiditi 2017 pada tahun ini. Terdapat dua fokus utama dalam kajian ini iaitu Tinjauan Kesihatan Remaja dan Tinjauan Pemakanan Remaja. Maklumat di bawah akan menjelaskan hal-hal berkenaan tinjauan tersebut untuk persetujuan anda menyertai tinjauan ini.

Adalah penting untuk anda memahami mengapa tinjauan ini dilakukan dan apa yang perlu anda lakukan. Sila ambil masa yang secukupnya untuk membaca dengan teliti penerangan yang diberi sebelum anda bersetuju untuk menyertai tinjauan ini. Jika anda mempunyai sebarang kemusykilan ataupun memerlukan maklumat lanjut, anda boleh bertanya dengan mana-mana ahli kumpulan tinjauan ini.

Setelah anda memahami maklumat tinjauan ini dan diberi keizinan oleh Ibu Bapa/Penjaga untuk anda mengambil bahagian, anda perlu menandatangani Borang Persetujuan Responden (**Salinan Responden & Salinan Penyelidik**) yang disertakan bersama-sama risalah ini. Anda mempunyai masa selama tujuh (7) hari untuk membuat keputusan bagi penyertaan dalam kajian ini. Borang persetujuan yang telah ditandatangani akan dikumpul oleh pasukan penyelidik sebelum pengumpulan data dijalankan. Penyertaan anda dalam tinjauan ini adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa. Anda boleh tidak menjawab mana-mana soalan atau menarik diri dari pemeriksaan yang disebutkan sekiranya tidak mahu. Keengganan anda untuk mengambil bahagian atau menarik diri tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anda.

Tinjauan ini ditaja sepenuhnya oleh Kementerian Kesihatan Malaysia dan telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

#### 5. Apakah tujuan tinjauan ini dilakukan?

Tujuan tinjauan ini dijalankan adalah untuk memperoleh maklumat berkenaan kesihatan dan faktor pelindung serta menilai status pemakanan, corak pengambilan makanan dan corak aktiviti fizikal dalam kalangan remaja berumur 10 hingga 17 tahun. Maklumat yang diperolehi ini akan dikaji dan dinilai bagi membantu penilaian keberkesanan strategi yang dilaksanakan di peringkat sekolah dan untuk meningkatkan kesihatan remaja.

#### 6. Apakah yang perlu saya lalui/lakukan sekiranya bersetuju untuk menyertai tinjauan ini?

Memberi respon terhadap soalan-soalan kaji selidik yang perlu dijawab oleh anda dan juga pengambilan ukuran berat dan tinggi yang akan dilakukan oleh pasukan penyelidik.

#### 7. Apakah tanggungjawab saya sewaktu menyertai tinjauan ini?

Adalah penting untuk anda menjawab kesemua soalan yang ditanya oleh ahli penyelidik dengan lengkap. Menyertai tinjauan ini tidak memerlukan anda mengeluarkan sebarang perbelanjaan.

#### 8. Apakah risiko dan kesan-kesan sampingan menyertai tinjauan ini?

Tiada risiko terhadap anda sekiranya menyertai tinjauan ini memandangkan tiada kaedah yang invasif atau merbahaya digunakan.



**9. Apakah manfaatnya saya menyertai tinjauan ini?**

Tinjauan ini tidak memberikan sebarang saguhati atau kesan kesihatan secara langsung apabila anda menyertai tinjauan ini. Namu, segala maklumat yang diperolehi daripada tinjauan ini akan dapat membantu penggubal dasar untuk merancang dan menambahbaik program sedia ada untuk golongan remaja di Malaysia.

**10. Adakah maklumat saya akan dirahsiakan?**

Segala maklumat anda yang diperolehi dalam tinjauan ini akan disimpan dan dikendalikan secara sulit, bersesuaian dengan peraturan-peraturan dan/ atau undang-undang yang berkenaan. Hanya penyelidik, peninjau yang berkeelayakan, auditor, dan pihak berkuasa yang berkaitan kajian ini sahaja mempunyai akses kepada maklumat yang anda berikan. Sekiranya hasil tinjauan ini diterbitkan atau dibentangkan kepada orang ramai, identiti anda tidak akan didedahkan tanpa kebenaran anda terlebih dahulu.

**11. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?**

Sekiranya anda mempunyai sebarang soalan mengenai tinjauan ini atau memerlukan keterangan lanjut, anda boleh hubungi penyelidik, Dr. S Maria Awaluddin, Puan Ruhaya Salleh dan Dr. Mohd Kamal Ariff Abdul Ghani di Institut Kesihatan Umum, Jalan Bangsar, Kuala Lumpur di talian 03-22979400 untuk penjelasan lebih lanjut.

Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai responden dalam tinjauan ini, sila hubungi Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan (MREC), Kementerian Kesihatan Malaysia di talian 03-22874032.

**BORANG PERSETUJUAN RESPONDEN BAWAH 18 TAHUN (Untuk Salinan Responden)**

**Tajuk kajian: Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017**

Dengan menandatangani di bawah (Salinan Responden dan Salinan Penyelidik), saya mengesahkan bahawa:

	Sila tandakan ✓ di dalam kotak
1. Saya telah diberi maklumat tentang tinjauan di atas secara lisan dan bertulis dan saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini.	<input type="checkbox"/>
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam tinjauan ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	<input type="checkbox"/>
3. Saya faham bahawa penyertaan saya adalah secara sukarela dan boleh menarik diri daripada tinjauan ini pada bila-bila masa tanpa memberi sebarang sebab.	<input type="checkbox"/>
4. Saya memahami risiko dan manfaat dari tinjauan ini dan saya memberi keizinan secara sukarela untuk mengambil bahagian dalam tinjauan. Saya faham bahawa saya mesti mengikuti arahan yang berkaitan dengan penyertaan saya dalam tinjauan ini.	<input type="checkbox"/>
5. Saya faham bahawa penyelidik, peninjau yang berkeelayakan, auditor, dan pihak kuasa yang berkaitan mempunyai akses kepada maklumat yang saya berikan untuk memastikan maklumat tinjauan dicatat dengan betul. Saya faham segala maklumat peribadi dan data tinjauan ini akan dirahsiakan.	<input type="checkbox"/>
6. Saya akan menerima satu salinan maklumat tinjauan/borang persetujuan ini yang telah ditandatangani dan bertarikh.	<input type="checkbox"/>

**Responden :**  
 Tandatangan : .....  
 Nama : .....  
 Nombor K/P : .....  
 Tarikh : .....

**Penyelidik:**  
 Tandatangan : .....  
 Nama : .....  
 Nombor K/P : .....  
 Tarikh : .....



Borang Perseetujuan Responden (Bawah 18 Tahun) NHMS 2017

**BORANG PERSETUJUAN RESPONDEN BAWAH 18 TAHUN (Untuk Salinan Penyelidik)**

**Tajuk kajian: Tinjauan Kebangsaan Kesihatan dan Morbiditi (NHMS) 2017**

Dengan menandatangani di bawah (Salinan Responden dan Salinan Penyelidik), saya mengesahkan bahawa:

	Sila tandakan ✓ di dalam kotak
1. Saya telah diberi maklumat tentang tinjauan di atas secara lisan dan bertulis dan saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini.	<input type="checkbox"/>
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam tinjauan ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	<input type="checkbox"/>
3. Saya faham bahawa penyertaan saya adalah secara sukarela dan boleh menarik diri daripada tinjauan ini pada bila-bila masa tanpa memberi sebarang sebab.	<input type="checkbox"/>
4. Saya memahami risiko dan manfaat dari tinjauan ini dan saya memberi keizinan secara sukarela untuk mengambil bahagian dalam tinjauan. Saya faham bahawa saya mesti mengikuti arahan yang berkaitan dengan penyertaan saya dalam tinjauan ini.	<input type="checkbox"/>
5. Saya faham bahawa penyelidik, peninjau yang berkeelayakan, auditor, dan pihak kuasa yang berkaitan mempunyai akses kepada maklumat yang saya berikan untuk memastikan maklumat tinjauan dicatat dengan betul. Saya faham segala maklumat peribadi dan data tinjauan ini akan dirahsiakan.	<input type="checkbox"/>
6. Saya akan menerima satu salinan maklumat tinjauan/borang persetujuan ini yang telah ditandatangani dan bertarikh.	<input type="checkbox"/>

**Responden :**

Tandatangan : .....  
 Nama : .....  
 Nombor K/P : .....  
 Tarikh : .....

**Penyelidik:**

Tandatangan : .....  
 Nama : .....  
 Nombor K/P : .....  
 Tarikh : .....

**Appendix 9: List of Abbreviations**

FFQ	Food Frequency Questionnaire
PE	Physical Education
PA	Physical Activity
BAZ	BMI-for-Age
HAZ	Height-for-Age
MDG	Malaysian Dietary Guidelines
RNI	Recommended Nutrient Intake
Kcal	Kilocalorie
NHMS	National Health and Morbidity Survey
CCT	Central Coordinating Team
PSP	Pegawai Sains Pemakanan
RA	Research Assistant
RO	Research Officer
g	gram
mg	milligram
µg	microgram
IU	International Unit
ANS	Adolescent Nutrition Survey
MSNS	Malaysian School-based Nutrition Survey
ID	Identity Detail
DPQ	Department of Proposal and Quality
DR	Dietary recall
QC	Quality Control
CI	Confidence Interval
PAQ-C	Physical Activity Questionnaire for Older Children
PAL	Physical Activity Level
cm	Centimeter
SD	Standard Deviation
MOH	Ministry of Health
IOM	Institute of Medicine
AL	Adequate intake
UL	Upper level intake
Tsp	tea spoon
Tbsp	table spoon



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ISBN 978-983-2387-57-2



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