

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

ADOLESCENT NUTRITION SURVEY

SABAH



THE NATIONAL HEALTH AND MORBIDITY SURVEY 2017

ADOLESCENT NUTRITION SURVEY 2017

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Table of Contents

Acknowledgement	i
List of Tables	v
List of Appendices	ix
Executive Summary	x
1.0 Introduction	1
1.1 Objectives.....	4
1.1.1 General Objectives	4
1.1.2 Specific Objectives.....	4
1.2 The NHMS 2017 Organisation Team.....	4
1.2.1 NHMS Steering Committee	4
1.2.2 Central Coordinating Team (CCT).....	5
1.2.3 Research Team Members.....	5
1.2.4 State Liason Officers and Data Collection Team	5
2.0 Methodology	7
2.1 Target Population	7
2.2 Sampling Frame	7
2.3 Sample Size Determination.....	7
2.4 Sampling Design.....	8
2.5 Ethical Approval	9
2.6 Data Collection	9
2.7 Data Management	9
2.7.1 Data Operation Centre	9
2.7.2 Data Analysis.....	11
2.8 Survey Instruments	11
3.0 Findings	12
3.1 General Findings	12
3.2 Nutritional status among adolescents (Primary 4 to Secondary 5) in Sabah	15
3.2.1 Introduction.....	15
3.2.2 Objectives	15
3.2.3 Variable definition	15

3.2.4 Findings.....	15
3.2.4.1 Height-for-Age z-score	15
3.2.4.2 BMI-for-Age z-score.....	16
3.2.5 Conclusion	16
3.2.6 Recommendation	16
3.3 Perception on body weight management Adolescent (Primary 4 To Secondary 5) In Sabah.....	21
3.3.1 Introduction.....	21
3.3.2 Objectives	21
3.3.3 Variable definition	21
3.3.4 Findings.....	22
3.3.5 Discussion/Conclusion.....	23
3.3.6 Recommendation	23
3.4 Meal pattern among adolescents (Primary 4 to Secondary 5) in Sabah	45
3.4.1 Introduction.....	45
3.4.2 Objective	45
3.4.3 Variable Definition.....	45
3.4.4 Findings.....	46
3.4.5 Discussions/Conclusion	47
3.4.6 Recommendation	47
3.5 Physical activity among adolescents (Primary 4 To Secondary 5) In Sabah	119
3.5.1 Introduction.....	119
3.5.2 Objectives.....	119
3.5.3 Variable definitions	119
3.5.4 Findings.....	120
3.5.5 Discussion	120
3.5.6 Conclusion	120
3.5.7 Recommendations	121
3.6. Supplements intake among adolescents (Primary 4 to Secondary 5) in Sabah.....	128
3.6.1 Introduction.....	128
3.6.2 Objectives.....	128
3.6.3 Findings.....	129

3.6.4 Discussions	129
3.6.5 Conclusions.....	129
3.6.6 Recommendation	129
3.7 Food and nutrition labeling Among Adolescents (Secondary 1 To Secondary 5) In Sabah.....	148
3.7.1 Introduction.....	148
3.7.2 Objectives	148
3.7.2.1 General objective	148
3.7.2.2 Specific objectives:	148
3.7.3 Variable definitions	149
3.7.4 Findings	150
3.7.4.1 Prevalence of reading food labels when buying or receiving food/drink among adolescents in Sabah.....	150
3.7.4.2 Reasons for not reading food and nutrition labelling among adolescents in Sabah	150
3.7.4.3 Types of nutrition information (energy, carbohydrate/ sugar, fat, protein, sodium, vitamin, mineral and fiber content) that were read from food labels.	150
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.....	150
3.7.4.5 Understanding of nutrition facts among adolescents in Sabah	151
3.7.4.6 Understanding of front of pack labelling among adolescents in Sabah	151
3.7.4.7 Understanding of the most and least used ingredients based on the list of food ingredients among adolescents in Sabah	151
3.7.5 Discussion/Conclusion.....	151
3.7.6 Recommendations	152
APPENDICES	171

List of Tables

METHODOLOGY

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

FINDINGS

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

Table 3.1.2 Comparison between NHMS 2017 respondents and national enrolment of secondary

NUTRITIONAL STATUS AMONG ADOLESCENTS (PRIMARY 4 TO SECONDARY 5) IN SABAH

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

Table 3.2.2 Distribution of adolescents according to BMI-For-Age status by socio-demographic characteristics

PERCEPTION OF WEIGHT MANAGEMENT AMONG ADOLESCENT (PRIMARY 4 TO SECONDARY 5) IN SABAH

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

Table 3.3.2 Body weight perception among adolescent by actual BMI for age status.

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

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

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

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

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

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

MEAL PATTERN AMONG ADOLESCENTS (PRIMARY 4 TO SECONDARY 5) IN SABAH

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

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

Table 3.4.3	Reasons for skipping breakfast among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.4	Prevalence of lunch per week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.5	Source of food for lunch among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.6	Reasons for skipping lunch among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.7	Prevalence of dinner per week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.8	Source of food for dinner among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.9	Reasons for skipping dinner among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.10	Prevalence of eating and/or drinking during recess time per week among adolescents by socio-demographics and nutritional status
Table 3.4.11	Source of food during recess time among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.12	Prevalence of afternoon tea per week among adolescents per week by socio-demographic characteristics and nutritional status
Table 3.4.13	Source of food for afternoon tea among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.14	Prevalence of heavy meal after dinner per week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.15	Source of food for eating heavy meal after dinner among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.16	Prevalence of fast food consumption per week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.17	Practice of bring food to school among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.18	Type of food usually bring to school among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.19	Practice of bring drinks to school among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.20	Type of drinks usually bring to school among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.21	Spending of pocket money among adolescents by socio-demographic characteristics and nutritional status

Table 3.4.22	Prevalence of eating out in a week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.23	Prevalence of consuming snack food in a week among adolescents by socio-demographic characteristics and nutritional status
Table 3.4.24	Type of snack foods usually consumed among adolescents by socio-demographic characteristics and nutritional status
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
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
Table 3.4.27	Media sources which affected dietary pattern among adolescents by socio-demographic characteristics and nutritional status

PHYSICAL ACTIVITY AMONG ADOLESCENTS (PRIMARY 4 TO SECONDARY 5) IN SABAH

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

VITAMIN/MINERAL AND FOOD SUPPLEMENT INTAKES AMONG ADOLESCENTS (PRIMARY 4 TO SECONDARY 5) IN SABAH

Table 3.6.1	Prevalence of adolescents taking vitamin/ mineral supplements by socio-demographic characteristic
Table 3.6.2	Types of vitamin/ mineral usually consumed among adolescents by socio-demographic characteristics
Table 3.6.3	Reasons for taking vitamin/ mineral among adolescents by socio-demographic characteristics
Table 3.6.4	Frequency of taking vitamin/ mineral among adolescents by socio-

demographic characteristics

Table 3.6.5	Prevalence of adolescents taking food supplements by socio-demographic characteristic
Table 3.6.6	Types of food supplement usually consumed among adolescents by socio-demographic characteristics
Table 3.6.7	Reasons for taking food supplements among adolescents by socio-demographic characteristics in Sabah
Table 3.6.8	Frequency of taking food supplements among adolescents by socio-demographic characteristics

FOOD AND NUTRITION LABELLING AMONG ADOLESCENTS (SECONDARY 1 TO SECONDARY 5) IN SABAH

Table 3.7.1	Prevalence of reading food and nutritional labelling when buying or receiving food/drink
Table 3.7.2	Reason for not reading food label among adolescents
Table 3.7.3a	Prevalence of reading nutrition information (macronutrient) among those who read food label (Yes, always/ Yes, sometimes)
Table 3.7.3b	Prevalence of reading nutrition information (micronutrient/fiber) among those who read food label (Yes, always/ Yes, sometimes)
Table 3.7.4	Prevalence of reading food label among those who read food label (Yes, always/ Yes, sometimes)
Table 3.7.5	Prevalence of understanding on the interpretation calorie and sugar content on the nutrition labelling among adolescents
Table 3.7.6	Prevalence of understanding on correct interpretation of front of pack labelling for energy among adolescents
Table 3.7.7	Prevalence on the understanding of food ingredients among adolescents

List of Appendices

Appendix 1	Members of Steering Committee NHMS 2015-2018
Appendix 2	Terms of Reference for NHMS 2015-2018 Steering Committee
Appendix 3	List of members of Central Coordinating Committee
Appendix 4	Terms of Reference for NHMS 2017 Central Coordinating Team
Appendix 5	List of Research Team Members, NHMS 2017
Appendix 6	List of Data Collection Teams
Appendix 7	Questionnaires
Appendix 8	Consent Form
Appendix 9	List of Abbreviations

Executive Summary

The Adolescent Nutrition Survey (ANS) was the second nation-wide study among adolescents in Malaysia after the Malaysia School-based Nutrition Survey (MSNS) 2012. There were three main scopes in this survey; which were Adolescent Nutrition Survey (ANS), Habitual Food Intake and Dietary Intake. ANS consisted 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. It was a cross-sectional study involving school-going adolescents of Primary 4 to Secondary 5 attending schools 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 and face-to-face-interviews. Total response rates for self-administered questionnaire were 89.5% for ANS, 96.4% for habitual food intake and 96.6% for dietary intake assessment.

Based on the indicator height for age (HAZ), the prevalence of normal height ($HAZ \geq -2SD$) was 88.1% and stunting was 11.9%. The prevalence of stunting was higher in rural areas (14.3%) as compared to urban areas (9.3%). In terms of BMI for age (BAZ), the prevalence of thinness was 5.9%, overweight was 14.1% and obesity was 9.9%.

Among those school-going adolescents who had actual normal weight, 45.3% correctly perceived their weight to be normal. Among those who were actually thin, 78.4% correctly perceived their weight to be thin, while among those who were actually overweight and obese, 38.7% and 12.7% correctly perceived themselves to be overweight and obese respectively. Health was the main reason among those who wanted to lose and gain weight; with 64.1% preferring exercise as an option to lose weight; 52.6% 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 35.1%. The majority of them had breakfast one to six days per week (58.4%) and some of them did not have breakfast in a week (6.5%). Among those who had breakfast, 67.5% had it at home. Adolescents from urban areas (41.3%) reported having breakfast daily (seven days per week), higher than rural areas (29.6%). The two main reasons of skipping breakfast were no appetite (46.1%) and no time (32.9%).

The prevalence of having lunch seven days per week among school-going adolescents was 46.1%; 51.6% had lunch up to six days per week and 2.3% did not have lunch in a week. No appetite (52.9%) and no time (15.9%) were the two main reasons for skipping lunch. As for dinner, 58.1% of school-going adolescents had dinner seven days per week, 39.6% 1-6 days per week and 2.3% did not have dinner in a week. Only 8.4% took heavy meals after dinner seven days per week.

There were 4.3% who had fast food daily and 12.7% did not have fast food. Social media (YouTube, Facebook, Instagram, etc.) and television were reported as the main sources which affected dietary pattern in 36.3% and 36.7%. A percentage of 28.2% reported that their dietary patterns were not affected by any media sources.

The prevalence of physical activity among school-going adolescents in Sabah was 45.6%. 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 adolescents in Sabah was 47.8% and 31.5%. In average, the vitamin/mineral and food supplements were consumed everyday by 17.6% and 12.3% of adolescents. The most commonly consumed vitamin / minerals and food supplements were Vitamin C 36.1% and bee product 11.4% (95% CI: 9.12, 14.10). The main reason for taking vitamin / minerals and food supplements was due to parent's advised, which 41.9 % and 26.4% respectively.

Food and nutrition labelling use was assessed among secondary school-going adolescents; 35.1% always reading food and nutrition labelling. Another 48.5% reported as sometimes and only 16.4% never reading food label. They were more concerned about fat and total energy compared to other nutrients. 33.8% of adolescents both answered correctly on nutrition facts and 17.8% of adolescents answered correctly questions regarding the front of pack labelling and only 6.6% 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 status is 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 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). Under nutrition 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 whereby the prevalence of underweight, stunting and thinness were reduced to 13.0%, 13.4% and 7.8% respectively in NHMS 2015 (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 2015 (IPH, 2015). NHMS in the year 2011 showed that the nationwide prevalence of obesity in adolescent aged 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 aimed to continue exploring issues pertaining to nutrition related components 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 among Malaysian adolescents aged 10 – 17 years.

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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 adolescents (Standard 4 to Form 5) in Malaysia.

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

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

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

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

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

1.2 The NHMS 2017 Organisation Team

The organisation of NHMS 2017 was set up at various levels at 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 . 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 team 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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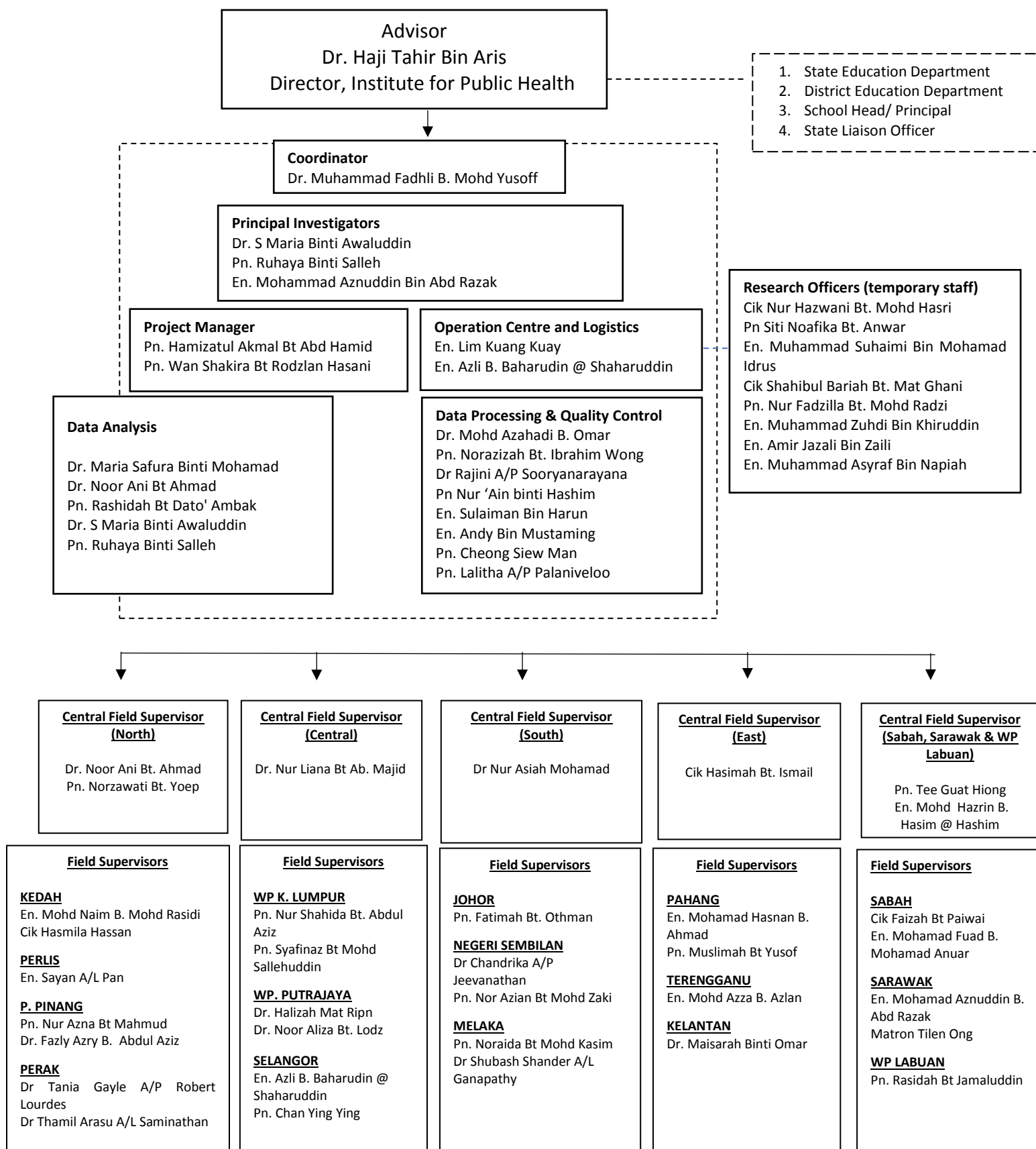


Figure 1: Organisation chart for data collection teams NHMS 2017

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 adjusted according to the need of the analysis, analysis to be carried out at the national or 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
Total		2,738	212	30,496	7,925	99	14,000

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 a list of eligible schools provided by the 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 and Dietary Intake modules. 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 schools were carried out. Consent forms were obtained from parents and students.

2.6 Data Collection

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

An initial data collection by the core team members was initiated to observe the flow of data collection on 6 March 2017. The data collection training was conducted for Peninsular Malaysia in Kuala Lumpur and Sabah, Sarawak and WP Labuan in Kuching, Sarawak simultaneously. Data collection was conducted from 26 March to 3 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 to 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

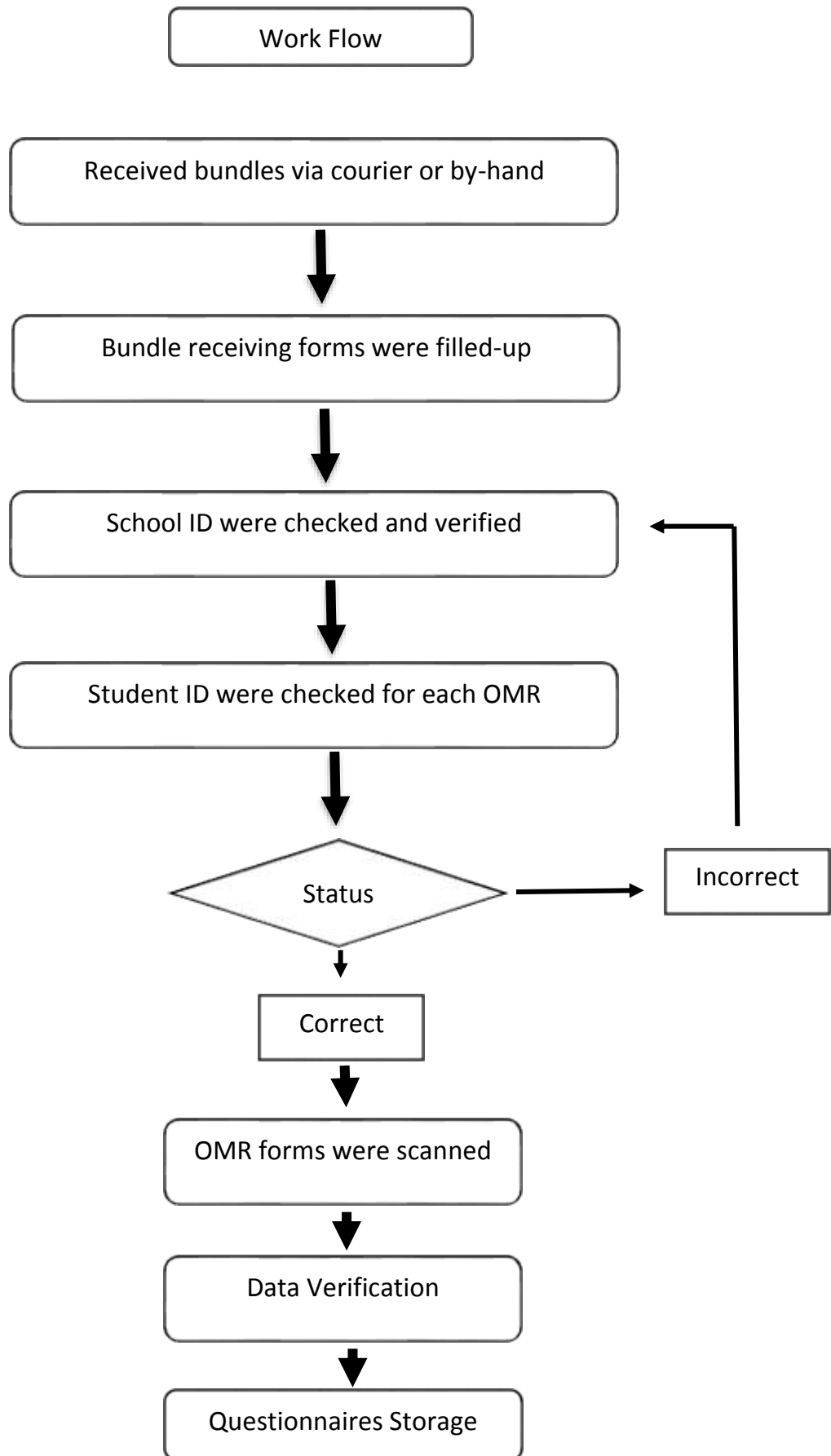


Figure 2: Work Flow of NHMS 2017

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 sample analysis procedures were used in the analysis and was carried out at 95% confidence interval. The final data was representative of all students attending schools 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. Majority of the students completed the survey within two class periods.

The ANS questionnaire contained sub topic which was 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 rates were 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 (%)
Malaysia	311	44,773	40,087	89.5
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 (%)
MALAYSIA	40087	3,480,500	100	3,480,439	100
State					
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
Sex					
Male	19677	1,746,339	50.2	1,746,326	50.2
Female	20410	1,734,161	49.8	1,734,113	49.8
Form					
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

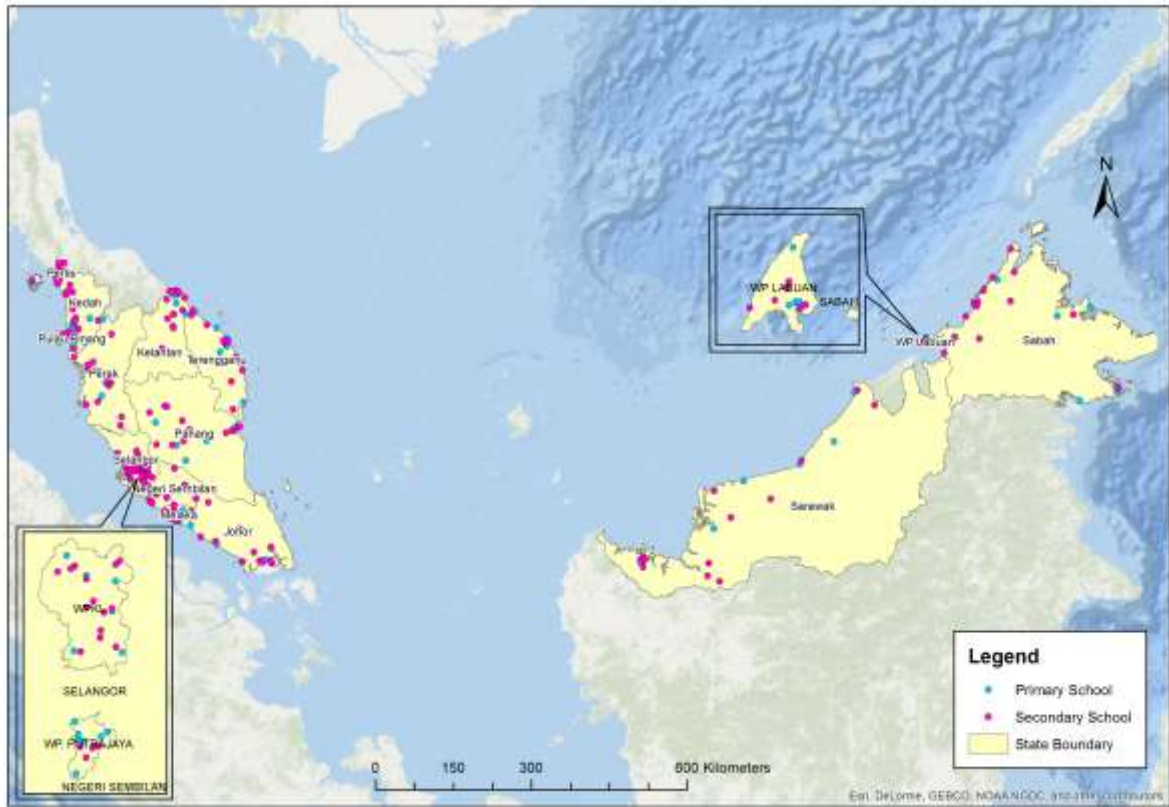


Figure 3: GIS mapping of the selected primary and secondary schools in Malaysia 2017

3.2 Nutritional status among adolescents (Primary 4 to Secondary 5) in Sabah

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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 Malaysia 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)¹. The major indices 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 survey found that 88.1% (95% CI: 84.98, 90.60) of the adolescents had normal height-for-age status (HAZ: $\geq -2SD$ to $< +2SD$). The prevalence was lower than the national level [91.8% (95% CI: 91.19-92.29)]. Comparing between strata, rural area had higher percentage of total stunting [14.3% (95% CI: 11.11, 18.12)] compared to urban area [9.3% (95% CI: 6.13, 13.88%)]. In term of gender, girls had higher percentage of total stunting [14.1% (95% CI: 11.16, 17.69)] compared to boys [9.8% (95% CI: 7.39, 12.80)]. Comparing class category, primary level had higher percentage of total stunting [14.1% (95% CI: 10.96, 17.94)] compared to primary level [8.7% (95% CI: 5.78, 12.83)].

3.2.4.2 BMI-for-Age z-score

In terms of BMI-for-age status, the findings showed that 70.1% (95% CI: 66.74, 73.18) of the students was in the normal range ($\geq -2SD$ to $< +1SD$). The prevalence was higher than national level [62.9% (95% CI: 61.84, 64.02)]. Comparing between strata, urban area had higher percentage of thinness [6.3% (95% CI: 4.64, 8.46)] compared to rural area [5.6% (95% CI: 4.13, 7.55%)]. According to gender, more boys [6.3% (95% CI: 5.20, 7.71)] were thinner than girls [5.5% (95% CI: 3.88, 7.72)]. In term of class category, primary level had higher percentage of thinness [6.7% (95% CI: 4.88, 9.17)] compared to secondary level [5.4% (95% CI: 4.07, 7.12)].

Overall the prevalence of overweight among adolescents in Sabah (BMI-for-age: $> +1SD$ to $\leq +2SD$) was 14.1% (95% CI: 12.11, 16.46). The state prevalence was lower than the national prevalence [15.6% (95% CI: 15.06, 16.19)]. However, the prevalence of overweight was not much difference between urban [14.2% (95% CI: 10.42, 18.96)] and rural strata [14.1% (95% CI: 12.60, 15.82)]. Similarly, there was not much difference of overweight among boys [14.2% (95% CI: 11.01, 18.04)] and girls [14.1% (95% CI: 12.25, 16.25)]. In term of class category, secondary level had slightly higher prevalence of overweight [14.4% (95% CI: 12.64, 16.37)] compared with primary level [13.8% (95% CI: 9.74, 19.09)].

For the prevalence of obesity (BMI-for-age: $> +2SD$), the state prevalence was 9.9% (95% CI: 8.01, 12.11); lower than national prevalence [14.8 (95% CI: 14.00, 15.73)]. Between strata, urban strata showed higher prevalence of obesity [10.2% (95% CI: 7.42, 13.83)] than rural strata [9.6% (95% CI: 7.28, 12.54)]. Comparing between sexes, boys had higher prevalence of obesity [12.8% (95% CI: 10.27, 15.80)] than girls [6.9% (95% CI: 5.29, 9.04)]. In term of class category, 11.9% (95% CI: 8.72, 16.13) primary level were obese compared to secondary level 8.5% [(95% CI: 6.75, 10.64)].

3.2.5 Conclusion

The prevalence of stunting for adolescents aged 10 to 17 years in Sabah was 11.9%. On the other hand, the prevalence of overweight and obesity among these adolescents were 14.1% and 9.9% respectively. In contrast, 5.9% of these adolescents were found to be thin. High demand of energy and nutrient are very important for physical growth and development at this age. Therefore, the concept of healthy eating and living should be practised at younger age to ensure healthy physical and mental development and subsequently to reduce the prevalence of stunting, thinness, overweight and obesity.

3.2.6 Recommendation

Thinness, overweight and obesity among adolescents aged 10 to 17 years in Sabah need to be addressed. Various agencies have to take the initiative to set up plan of action to overcome this problem. Healthy eating and living concept should be carried out at an earlier

age. It can be implemented by develop pro-health policies and regulation to create health promoting environment in work place, school, public areas and even at homes.

One of the suggested initiatives that involve collaboration between Ministry of Health and Ministry of Education is to empower Parents and Teachers Association in school to disseminate and implement healthy eating programs in schools. This can provides 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.

Anthropometry is the measurement of physical dimensions such as height or weight, as well as the fat mass composition of the human body to provide information about a person's nutritional status. An index is a combination of two anthropometric measurements or an anthropometric measurement plus age. Anthropometry is a practical and immediately applicable technique for assessing a person's developmental patterns.

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

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
Sabah	300	39445	11.9	9.40	15.02	2131	291279	88.1	84.98	90.60
Locality of School										
Urban	102	14488	9.3	6.13	13.88	965	141206	90.7	86.12	93.87
Rural	198	24957	14.3	11.11	18.12	1166	150073	85.7	81.88	88.89
Sex										
Boys	125	16229	9.8	7.39	12.80	1088	150002	90.2	87.20	92.61
Girls	175	23216	14.1	11.16	17.69	1043	141277	85.9	82.31	88.84
Class										
Standard 4	26	5165	11.7	9.26	14.56	190	39167	88.3	85.44	90.74
Standard 5	16	3272	7.5	4.16	13.07	201	40489	92.5	86.93	95.84
Standard 6	23	3043	6.9	3.13	14.47	294	41170	93.1	85.53	96.87
Form 1	43	4977	11.7	6.94	18.97	328	37672	88.3	81.03	93.06
Form 2	36	4260	10.5	6.10	17.48	317	36324	89.5	82.52	93.90
Form 3	49	5900	14.5	10.26	20.13	286	34757	85.5	79.87	89.74
Form 4	40	6190	16.2	11.53	22.21	219	32084	83.8	77.79	88.47
Form 5	67	6638	18.3	13.88	23.76	296	29616	81.7	76.24	86.12
Class Category										
Primary Level	65	11480	8.7	5.78	12.83	685	120826	91.3	87.17	94.22
Secondary Level	235	27965	14.1	10.96	17.94	1446	170453	85.9	82.06	89.04
Ethnicity										
Malay	35	5194	11.5	8.50	15.35	305	40004	88.5	84.65	91.50
Chinese	20	3177	5.8	3.99	8.46	317	51241	94.2	91.54	96.01
Indian	2	247	22.1	5.77	56.67	8	872	77.9	43.33	94.23
Bumiputera Sabah	208	25804	13.4	10.33	17.27	1267	166363	86.6	82.73	89.67
Bumiputera Sarawak	5	512	10.6	3.74	26.65	31	4316	89.4	73.35	96.26
Others	30	4512	13.7	8.99	20.25	203	28483	86.3	79.75	91.01

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
Sabah	141	19585	5.9	4.77	7.33	1707	231700	70.1	66.74	73.18
Locality of School										
Urban	69	9783	6.3	4.64	8.46	736	107998	69.4	63.32	74.81
Rural	72	9803	5.6	4.13	7.55	971	123702	70.7	67.36	73.78
Sex										
Boys	77	10543	6.3	5.20	7.71	812	110901	66.7	61.88	71.23
Girls	64	9042	5.5	3.88	7.72	895	120799	73.4	70.52	76.16
Class										
Standard 4	14	2611	5.9	3.97	8.65	142	29560	66.7	56.29	75.67
Standard 5	16	3111	7.1	4.44	11.18	143	29240	66.8	58.40	74.28
Standard 6	23	3162	7.2	4.70	10.73	216	30620	69.3	61.68	75.92
Form 1	26	3026	7.1	4.25	11.63	249	28760	67.4	63.39	71.23
Form 2	15	1795	4.4	2.18	8.78	256	29532	72.8	65.36	79.10
Form 3	18	2284	5.6	3.51	8.88	246	29877	73.5	66.52	79.45
Form 4	15	2137	5.6	3.98	7.77	181	26851	70.2	65.66	74.29
Form 5	14	1459	4.0	1.64	9.52	274	27259	75.2	69.10	80.42
Class Category										
Primary Level	53	8884	6.7	4.88	9.17	501	89420	67.6	60.93	73.60
Secondary Level	88	10702	5.4	4.07	7.12	1206	142280	71.7	68.74	74.50
Ethnicity										
Malay	20	2871	6.4	3.77	10.49	236	31686	70.1	65.78	74.10
Chinese	21	2927	5.4	3.72	7.71	214	36080	66.3	50.92	78.87
Indian						6	667	59.6	26.15	86.00
Bumiputera Sabah	78	10686	5.6	4.11	7.49	1066	137543	71.6	68.87	74.13
Bumiputera Sarawak	1	131	2.7	0.29	20.95	25	3341	69.2	52.73	81.91
Others	21	2971	9.0	5.52	14.35	160	22383	67.8	58.53	75.91

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
Sabah	347	46788	14.1	12.11	16.46	236	32651	9.9	8.01	12.11
Locality of School										
Urban	153	22050	14.2	10.42	18.96	109	15862	10.2	7.42	13.83
Rural	194	24738	14.1	12.60	15.82	127	16789	9.6	7.28	12.54
Sex										
Boys	172	23541	14.2	11.01	18.04	152	21246	12.8	10.27	15.80
Girls	175	23247	14.1	12.25	16.25	84	11404	6.9	5.29	9.04
Class										
Standard 4	33	6646	15.0	8.38	25.38	27	5514	12.4	8.01	18.82
Standard 5	29	5551	12.7	8.58	18.36	29	5858	13.4	9.19	19.10
Standard 6	44	6011	13.6	9.78	18.59	34	4421	10.0	5.08	18.73
Form 1	55	6337	14.9	11.80	18.54	41	4526	10.6	7.38	15.02
Form 2	47	5356	13.2	10.30	16.76	35	3901	9.6	6.81	13.40
Form 3	42	5073	12.5	8.59	17.77	29	3424	8.4	5.04	13.74
Form 4	42	6345	16.6	12.17	22.18	21	2941	7.7	5.46	10.71
Form 5	55	5469	15.1	11.82	19.05	20	2066	5.7	3.15	10.08
Class Category										
Primary Level	106	18209	13.8	9.74	19.09	90	15793	11.9	8.72	16.13
Secondary Level	241	28579	14.4	12.64	16.37	146	16858	8.5	6.75	10.64
Ethnicity										
Malay	48	6274	13.9	11.75	16.33	36	4368	9.7	7.02	13.16
Chinese	54	8318	15.3	8.55	25.82	48	7093	13.0	7.80	20.99
Indian	4	452	40.4	14.00	73.85					
Bumiputera Sabah	207	27085	14.1	11.99	16.51	124	16853	8.8	6.87	11.13
Bumiputera Sarawak	4	434	9.0	2.80	25.32	6	921	19.1	9.04	35.88
Others	30	4225	12.8	8.33	19.19	22	3415	10.4	5.38	19.00

3.3 Perception on body weight management Adolescent (Primary 4 To Secondary 5) In Sabah

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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 Objectives

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

Overall, 39.6% (95%CI:37.26,41.89) of the adolescents in Sabah perceived that they had normal weight and 39.6% (95%CI:34.94,44.36) adolescents perceived they were thin. Rural adolescents had a higher perceptions of being normal weight; 41.0% (95%CI: 38.21, 43.83) compared to adolescents in urban areas, 37.9% (95%CI: 34.51, 41.46). Girls had a higher perception of being normal weight at 40.8% (95%CI: 38.37, 43.37) compared to boys at 38.3% (95%CI: 34.52, 42.18). Girls also had a higher perception of being overweight at 22.7% (95%CI: 18.73, 27.26), compared to boys at 14.4% (95%CI: 11.41, 17.95) (**Table 3.3.1**).

Among the actual normal, 45.3% (95% CI: 42.0, 48.7) correctly perceived their weights to be normal, 42.3% (95% CI: 37.4, 47.40) underestimated their body weights, perceived to be thin, 11.5% (95% CI: 9.2, 14.4) and 0.9% (95% CI: 0.4,1.6) overestimated to be overweight and obese respectively. However, among the actual overweight; 38.7% (95% CI: 29.4, 48.9) correctly perceived their weights to be overweight. In addition, 25.5% (95% CI: 19.5, 32.6) and 32.0% (95% CI: 25.8, 38.9) underestimated their body weights to be thin or normal respectively (**Table 3.3.2**).

Among all the adolescents who correctly perceived thinness and had actual thin body weights, 64.0% (95% CI: 51.88, 74.54) reported they wanted to increase weight. While adolescents who perceived overweight and actual overweight, 82.9% (95% CI: 75.01,88.64) planned to lose their weights. There were no significant different in school locality, gender and school category among adolescent who correctly perceived thinness and overweight between four category of actions taken (**Table 3.3.3**).

However, adolescents who had misperception, i.e. perceived thinness but actually in overweight and obese categories, most of them 53.3% (95% CI: 42.09, 64.27) wanted to lose weight while 14.2% (95% CI: 9.98, 19.82) wanted to increase their weights. The prevalence of adolescents who wanted to lose weight was higher in rural areas [60.5% (95% CI: 45.42, 73.85)], boys [53.7% (95%CI: 41.26, 65.63)] and secondary school students [55.4% (95% CI: 43.24, 66.94)] (**Table 3.3.4**).

About 68.0% (95% CI: 62.38, 73.16) of the adolescents answered health purpose as the main factor that motivate them to lose weight followed by increase self-confidence [21.7% (95% CI: 16.74, 27.72)]. Beauty was the main factor to lose body weight among girls, 10.7% (95% CI: 8.23, 13.70) (**Table 3.3.5**).

Health was the main factor to motivate adolescents to increase body weight 61.6% (95% CI: 56.25, 66.77), followed by increase self-confidence 24.3% (95% CI: 19.69, 29.52) (**Table 3.3.6**).

Exercise was the preferred option to lose body weight 64.1% (95% CI: 59.96, 68.11). Adolescents in urban areas [64.5% (95% CI: 57.19, 71.23)], [boys, 72.0% (95% CI: 67.00, 76.45)], primary school students [67.3% (95% CI: 60.86, 73.11)] had the highest percentages of choosing exercise as their option to lose body weights (**Table 3.3.7**).

Increase quantity of food was the preferred option by adolescents to increase their body weights, 52.6% (46.09, 59.00). Adolescents in urban areas, 53.5% (95% CI: 42.81, 63.81), girls 55.4% (95% CI: 45.01, 65.27) and secondary school students 58.9% (51.89, 65.57) had the highest percentages to increase quantity of food as a preferred option to increase body weights (**Table 3.3.8**).

3.3.5 Discussion/Conclusion

Perception of being normal weight among adolescents in Sabah (39.6 %) was lower than the national prevalence at 41.4%.

Among the actual thin adolescents in Sabah, 78.4% had correctly perceived thin, and higher compared with the national prevalence, 69.9 %. Almost half of the adolescents (45.3%) with actual normal body weight correctly perceived their weights to be normal compared to national prevalence 50.2%.

The main factors to lose body weight among adolescent in Sabah were similar with the findings at national level; health (68.0%), as increase self confidence (21.7%), beauty (8.1%) and to have more friends (2.1%).

Health purpose is the highest 61.6 % main factor to increase body weight . But it was higher compared with the national prevalence. Its followed by to increase self confidence 24.3% , beauty purpose 10.6% and to have more friends 3.5%.

Adolescents chose exercise as their preferred option to lose weight. This prevalence was slightly higher compared with the national prevalence , 64.1% and 62.5% respectively. Other options were: reduced consumption of high fat foods 22.3%, increase intake of fruits and vegetables 4.6 % and reduce intake of high sugar foods 4.3%. These findings were comparable with the findings at the national level.

More than half (52.6%) of the adolescents in Sabah chose to increase quantity of food as the preferred option to increase body weight. The prevalence was comparable 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 population are overweight and obese. They are surrounded by overweight and obese peers, hence leading to them developing an inaccurate perception of healthy body weight or image. 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 lifestyles 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. The media should also play an important role by broadcasting more information targeting adolescents and families about healthy eating and active lifestyles.

In addition, a school-based health promotion programme incorporating a holistic curriculum may prove to be a good platform to tackle body image problems, encourage good eating habits and instil healthy body image amongst adolescents.

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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
Sabah	932	130714	39.6	34.94	44.36	972	130709	39.6	37.26	41.89
Locality of School										
Urban	400	59196	38.1	30.88	45.98	400	58856	37.9	34.51	41.46
Rural	532	71518	40.8	35.22	46.63	572	71853	41.0	38.21	43.83
Sex										
Boys	537	75184	45.2	39.84	50.63	474	63695	38.3	34.52	42.18
Girls	395	55530	33.8	29.29	38.73	498	67014	40.8	38.37	43.37
School Category										
Primary	325	57756	43.8	35.96	51.92	298	51811	39.3	34.86	43.88
Secondary	607	72959	36.7	31.76	42.03	674	78898	39.7	37.34	42.18
Class										
Standard 4	120	24057	54.7	45.00	64.15	68	14287	32.5	23.45	43.11
Standard 5	90	18321	41.9	32.29	52.09	87	17663	40.4	33.84	47.25
Standard 6	115	15378	34.8	27.09	43.36	143	19860	44.9	39.59	50.37
Form 1	149	17092	40.3	30.70	50.64	158	18401	43.4	36.00	51.00
Form 2	129	15412	38.1	29.06	48.03	152	17244	42.6	36.87	48.58
Form 3	128	15619	38.4	30.01	47.58	116	14278	35.1	29.21	41.51
Form 4	91	13680	35.7	27.86	44.48	97	13908	36.3	30.47	42.65
Form 5	110	11156	30.4	24.11	37.49	151	15069	41.0	35.68	46.62
Ethnicity										
Malay	161	22353	49.5	41.06	57.88	122	16067	35.5	28.35	43.47
Chinese	106	17241	31.7	25.04	39.31	132	22466	41.4	33.41	49.79
Indian	5	558	46.0	17.99	76.76	5	561	46.2	17.59	77.60
Bumiputera Sabah	538	72989	38.0	33.25	43.06	612	77817	40.5	38.65	42.47
Bumiputera Sarawak	13	1623	33.6	18.49	53.06	14	2008	41.6	27.81	56.83
Others	109	15951	48.3	40.06	56.69	87	11791	35.7	30.17	41.68

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
Sabah	466	61173	18.5	15.35	22.15	61	7871	2.4	1.51	3.74
Locality of School										
Urban	225	31764	20.5	15.68	26.26	39	5366	3.5	1.96	6.04
Rural	241	29410	16.8	13.07	21.28	22	2505	1.4	0.91	2.25
Sex										
Boys	179	23915	14.4	11.41	17.95	26	3620	2.2	1.14	4.12
Girls	287	37259	22.7	18.73	27.26	35	4252	2.6	1.57	4.24
School Category										
Primary	107	19130	14.5	10.97	18.93	18	3219	2.4	1.12	5.22
Secondary	359	42043	21.2	17.18	25.81	43	4652	2.3	1.34	4.06
Class										
Standard 4	20	4205	9.6	4.76	18.29	6	1393	3.2	1.45	6.77
Standard 5	35	6880	15.7	11.89	20.49	5	897	2.1	0.37	10.46
Standard 6	52	8046	18.2	11.27	28.03	7	929	2.1	1.14	3.84
Form 1	51	5822	13.7	9.66	19.11	11	1132	2.7	0.56	11.80
Form 2	62	6821	16.9	11.30	24.40	9	984	2.4	1.30	4.49
Form 3	84	9930	24.4	18.83	31.04	7	831	2.0	0.96	4.31
Form 4	69	10362	27.1	19.48	36.29	2	324	0.8	0.21	3.38
Form 5	93	9108	24.8	18.20	32.84	14	1382	3.8	1.77	7.84
Ethnicity										
Malay	54	6469	14.3	8.48	23.14	3	309	0.7	0.23	2.05
Chinese	75	11693	21.5	18.76	24.58	23	2914	5.4	2.47	11.27
Indian	1	95	7.8	0.86	45.08	-	-	-	-	-
Bumiputera Sabah	296	37531	19.6	15.65	24.17	29	3572	1.9	1.19	2.89
Bumiputera Sarawak	9	1197	24.8	14.48	39.10	-	-	-	-	-
Others	31	4188	12.7	8.31	18.91	6	1077	3.3	1.18	8.73

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
Sabah	111	78.4	71.72	83.80	28	20.3	14.91	27.03	2	1.3	0.33	5.18	-	-	-	-
Locality of school																
Urban	57	82.3	71.88	89.36	12	17.7	10.64	28.12	-	-	-	-	-	-	-	-
Rural	54	74.5	65.79	81.58	16	22.9	15.50	32.37	2	2.7	0.77	8.75	-	-	-	-
Sex																
Boys	60	77.4	67.54	84.97	15	20.1	12.88	29.97	2	2.5	0.62	9.42	-	-	-	-
Girls	51	79.5	70.52	86.21	13	20.5	13.79	29.48	0	0.0	0.00	0.00	-	-	-	-
School Category																
Primary	41	77.3	64.11	86.59	12	22.7	13.41	35.89	0	0.0	0.00	0.00	-	-	-	-
Secondary	70	79.3	73.11	84.34	16	18.3	13.85	23.73	2	2.4	0.70	8.17	-	-	-	-

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
Sabah	695	42.3	37.38	47.39	783	45.3	41.97	48.68	209	11.5	9.17	14.41	16	0.9	0.45	1.64
Locality of school																
Urban	293	40.6	32.91	48.74	326	45.0	39.40	50.79	104	13.3	9.95	17.52	10	1.1	0.44	2.76
Rural	402	43.8	37.79	50.02	457	45.5	41.73	49.40	105	10.0	7.14	13.86	6	0.6	0.28	1.45
Sex																
Boys	384	48.7	42.36	55.04	362	43.8	38.15	49.60	62	7.1	5.37	9.46	4	0.4	0.12	1.24
Girls	311	36.4	31.50	41.67	421	46.7	43.27	50.16	147	15.6	12.09	19.84	12	1.3	0.64	2.60
School Category																
Primary	240	48.4	38.91	58.03	219	43.3	36.22	50.56	37	7.6	5.10	11.10	4	0.8	0.27	2.10
Secondary	455	38.5	34.33	42.78	564	46.6	43.73	49.48	172	14.0	11.26	17.32	12	0.9	0.40	2.11

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
Sabah	84	25.5	19.50	32.64	112	32.0	25.83	38.92	137	38.7	29.36	48.86	14	3.8	1.63	8.64
Locality of school																
Urban	34	23.6	14.73	35.56	42	26.7	18.95	36.09	69	44.9	28.81	62.09	8	4.9	1.50	14.78
Rural	50	27.2	20.03	35.88	70	36.8	28.81	45.60	68	33.1	24.74	42.71	6	2.8	1.01	7.79
Sex																
Boys	58	35.9	26.69	46.37	62	34.5	26.52	43.35	45	25.4	15.40	38.88	7	4.2	1.07	15.23
Girls	26	15.0	10.20	21.43	50	29.6	21.59	39.01	92	52.1	42.20	61.82	7	3.4	1.44	7.71
School Category																
Primary	28	28.1	19.76	38.25	44	39.2	30.12	49.05	30	28.9	18.99	41.37	4	3.8	0.63	20.08
Secondary	56	23.9	16.11	33.88	68	27.5	20.83	35.27	107	44.9	32.95	57.40	10	3.8	1.73	8.09

Table 3.3.2: Body weight perception among adolescent by actual BMI for age status

Perceived	Actual obese															
	Thin				Normal				Overweight				Obese			
	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper	n	%	Lower	Upper
Sabah	40	16.7	10.83	24.98	47	21.1	15.23	28.52	116	49.4	42.98	55.92	31	12.7	7.58	20.49
Locality of school																
Urban	15	13.9	8.50	21.97	20	17.9	11.13	27.42	52	48.4	41.32	55.58	21	19.8	11.99	30.87
Rural	25	19.4	9.94	34.39	27	24.2	16.02	34.76	64	50.4	39.88	60.87	10	6.0	2.28	15.06
Sex																
Boys	33	20.9	12.87	32.07	33	22.5	14.70	32.87	69	46.1	37.04	55.43	15	10.5	5.17	20.12
Girls	7	9.1	3.43	22.20	14	18.6	10.18	31.43	47	55.6	44.40	66.18	16	16.7	8.03	31.64
School Category																
Primary	16	16.5	10.02	26.02	23	26.0	16.31	38.90	40	45.6	38.73	52.66	10	11.8	4.92	25.79
Secondary	24	17.0	8.35	31.39	24	16.5	11.72	22.82	76	53.0	42.27	63.46	21	13.5	7.35	23.52

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
Sabah	16	2859	18.8	9.94	32.57	75	9752	64.0	51.88	74.54
Locality of school										
Urban	12	2099	26.1	12.90	45.67	34	4450	55.3	41.10	68.68
Rural	4	760	10.6	4.00	25.11	41	5302	73.7	56.29	85.89
Sex										
Boys	8	1505	18.7	9.22	34.19	37	4610	57.2	39.82	72.99
Girls	8	1354	18.8	9.47	34.01	38	5142	71.6	56.26	83.12
School category										
Primary	13	2433	35.5	22.85	50.47	21	3336	48.6	36.20	61.20
Secondary	3	426	5.1	1.08	20.78	54	6416	76.6	61.96	86.76

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
Sabah	12	1644	10.8	5.95	18.76	7	987	6.5	3.40	11.98
Locality of school										
Urban	7	976	12.1	5.41	24.98	4	522	6.5	2.93	13.77
Rural	5	668	9.3	3.71	21.38	3	465	6.5	2.27	17.02
Sex										
Boys	10	1386	17.2	8.42	31.95	4	556	6.9	2.58	17.17
Girls	2	258	3.6	0.46	23.23	3	431	6.0	1.89	17.41
School category										
Primary	3	484	7.1	2.08	21.35	4	609	8.9	4.09	18.17
Secondary	9	1160	13.8	7.48	24.19	3	378	4.5	1.58	12.24

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
Sabah	188	25338	24.2	20.25	28.72	102	13904	13.3	9.93	17.59
Locality of school										
Urban	86	12703	26.2	19.55	34.20	30	4673	9.6	5.70	15.87
Rural	102	12636	22.5	18.21	27.52	72	9231	16.5	12.19	21.85
Sex										
Boys	67	8527	17.6	13.19	22.99	64	8715	17.9	13.52	23.43
Girls	121	16811	30.0	25.14	35.43	38	5189	9.3	5.49	15.22
School category										
Primary	58	9893	25.8	17.60	36.05	28	4794	12.5	7.35	20.40
Secondary	130	15446	23.4	19.54	27.66	74	9111	13.8	9.72	19.17

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
Sabah	253	33642	32.2	29.00	35.53	239	31655	30.3	26.34	34.54
Locality of school										
Urban	104	15500	32.0	26.27	38.32	106	15570	32.1	25.52	39.57
Rural	149	18141	32.3	29.27	35.57	133	16085	28.7	24.58	33.15
Sex										
Boys	111	15246	31.4	25.98	37.37	120	16074	33.1	27.62	39.08
Girls	142	18395	32.9	28.11	37.99	119	15581	27.8	23.32	32.85
School category										
Primary	61	11129	29.0	21.90	37.26	71	12590	32.8	25.39	41.14
Secondary	192	22512	34.0	31.57	36.60	168	19065	28.8	24.73	33.30

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
Sabah	113	14989	82.9	75.01	88.64	3	340	1.9	0.56	6.18
Locality of school										
Urban	54	7884	79.7	67.20	88.24	1	112	1.1	0.14	8.71
Rural	59	7104	86.7	77.50	92.55	2	229	2.8	0.65	11.15
Sex										
Boys	38	4973	83.2	68.75	91.79	1	126	2.1	0.25	15.47
Girls	75	10015	82.7	70.98	90.34	2	214	1.8	0.39	7.70
School category										
Primary	24	4123	78.3	67.13	86.47	-	-	-	-	-
Secondary	89	10866	84.7	74.50	91.35	3	340	2.7	0.78	8.67

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
Sabah	16	2142	11.8	7.32	18.60	5	615	3.4	1.41	7.96
Locality of school										
Urban	10	1368	13.8	7.39	24.39	4	531	5.4	2.19	12.57
Rural	6	774	9.4	4.47	18.87	1	84	1.0	0.15	6.51
Sex										
Boys	5	718	12.0	4.70	27.44	1	159	2.7	0.47	13.58
Girls	11	1424	11.8	6.22	21.12	4	456	3.8	1.20	11.23
School category										
Primary	5	963	18.3	11.01	28.81	1	178	3.4	0.50	19.50
Secondary	11	1179	9.2	4.65	17.36	4	437	3.4	1.29	8.67

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	
Sabah	67	9258	53.3	42.09	64.27	17	2465	14.2	9.98	19.82
Locality of school										
Urban	22	3221	43.6	28.93	59.56	9	1400	19.0	13.66	25.71
Rural	45	6037	60.5	45.42	73.85	8	1065	10.7	5.44	19.90
Sex										
Boys	50	6887	53.7	41.26	65.63	12	1692	13.2	8.91	19.07
Girls	17	2371	52.4	35.49	68.83	5	773	17.1	7.99	32.85
School category										
Primary	23	3902	50.8	32.01	69.29	6	1077	14.0	9.08	20.99
Secondary	44	5356	55.4	43.24	66.94	11	1388	14.4	8.40	23.46

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	
Sabah	19	2786	16.1	9.24	26.42	21	2847	16.4	11.48	22.89
Locality of school										
Urban	8	1306	17.7	7.00	38.04	10	1455	19.7	12.50	29.67
Rural	11	1481	14.8	7.53	27.19	11	1392	14.0	8.56	21.93
Sex										
Boys	15	2364	18.4	10.00	31.44	14	1891	14.7	9.40	22.36
Girls	4	423	9.3	3.04	25.35	7	955	21.1	9.69	40.09
School category										
Primary	7	1471	19.1	7.97	39.28	8	1238	16.1	9.18	26.70
Secondary	12	1315	13.6	7.30	23.95	13	1609	16.6	10.35	25.65

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	
Sabah	314	44031	34.9	30.39	39.66	327	45021	35.7	31.58	39.97
Locality of school										
Urban	148	22075	37.3	30.46	44.74	134	19482	32.9	26.07	40.63
Rural	166	21955	32.7	27.59	38.31	193	25539	38.1	34.51	41.76
Sex										
Boys	133	19220	30.8	23.37	39.45	172	23732	38.1	31.42	45.19
Girls	181	24811	38.8	33.34	44.63	155	21289	33.3	27.69	39.47
School category										
Primary	106	19062	37.6	29.19	46.92	88	16588	32.8	25.27	41.23
Secondary	208	24968	33.0	28.62	37.77	239	28433	37.6	33.69	41.72

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	
Sabah	184	24718	19.6	17.02	22.42	93	12457	9.9	8.28	11.72
Locality of school										
Urban	82	11485	19.4	16.06	23.28	43	6099	10.3	7.76	13.58
Rural	102	13233	19.7	16.07	23.97	50	6358	9.5	7.70	11.61
Sex										
Boys	93	12401	19.9	15.89	24.61	52	6986	11.2	8.71	14.31
Girls	91	12317	19.3	15.98	23.08	41	5470	8.6	6.33	11.49
School category										
Primary	55	9625	19.0	14.55	24.44	32	5366	10.6	8.16	13.66
Secondary	129	15093	20.0	17.09	23.19	61	7090	9.4	7.45	11.75

Table 3.3.5 : Main factors that motivate to lose 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
Sabah	606	85815	68.0	62.38	73.16	71	10255	8.1	6.35	10.34
Locality of school										
Urban	260	40253	66.8	57.82	74.64	39	5775	9.6	7.23	12.59
Rural	346	45562	69.1	61.99	75.49	32	4481	6.8	4.54	10.06
Sex										
Boys	278	39254	69.4	64.03	74.36	19	2829	5.0	2.81	8.77
Girls	328	46561	66.8	59.59	73.37	52	7426	10.7	8.23	13.70
School category										
Primary	231	40458	77.6	73.78	81.07	23	4330	8.3	6.10	11.23
Secondary	375	45357	61.2	55.00	67.12	48	5925	8.0	5.57	11.35
Class										
Standard 4	62	12524	76.6	70.51	81.74	12	2273	13.9	8.47	21.98
Standard 5	67	13464	78.9	66.97	87.34	8	1527	8.9	5.28	14.77
Standard 6	102	14471	77.4	70.10	83.34	3	530	2.8	0.77	9.85
Form 1	94	11173	71.6	61.82	79.62	4	401	2.6	0.54	11.36
Form 2	80	9489	68.0	55.43	78.46	5	478	3.4	0.95	11.56
Form 3	86	10430	62.8	52.85	71.70	13	1503	9.0	5.43	14.69
Form 4	52	7876	50.9	43.52	58.25	16	2622	16.9	11.23	24.76
Form 5	63	6389	51.4	42.74	60.04	10	921	7.4	3.07	16.86
Ethnicity										
Malay	92	12599	69.7	57.91	79.40	11	1621	9.0	5.04	15.46
Chinese	69	11809	74.2	61.92	83.59	10	1580	9.9	5.55	17.12
Indian	3	358	100.0	0.00	100.00	-	-	-	-	-
Bumiputera Sabah	381	51575	66.2	60.07	71.80	42	5834	7.5	5.31	10.45
Bumiputera Sarawak	5	718	50.7	29.53	71.55	2	290	20.5	5.88	51.42
Others	56	8757	70.1	59.30	78.97	6	931	7.5	3.43	15.44

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	224	27424	21.7	16.74	27.72	19	2692	2.1	1.15	3.91
Locality of school										
Urban	96	12429	20.6	13.49	30.18	13	1836	3.0	1.40	6.47
Rural	128	14995	22.8	16.36	30.74	6	856	1.3	0.58	2.91
Sex										
Boys	104	13056	23.1	17.94	29.20	10	1388	2.5	1.25	4.76
Girls	120	14368	20.6	15.03	27.63	9	1304	1.9	0.65	5.27
School category										
Primary	34	5446	10.5	7.80	13.86	12	1877	3.6	1.75	7.26
Secondary	190	21978	29.7	25.04	34.76	7	815	1.1	0.48	2.51
Class										
Standard 4	5	1146	7.0	2.87	16.13	2	410	2.5	0.64	9.29
Standard 5	9	1729	10.1	5.29	18.55	2	344	2.0	0.48	8.10
Standard 6	20	2571	13.8	8.79	20.88	8	1124	6.0	2.95	11.88
Form 1	32	3627	23.2	16.46	31.71	4	415	2.7	0.77	8.73
Form 2	33	3841	27.5	18.44	38.99	1	139	1.0	0.17	5.59
Form 3	38	4425	26.6	18.09	37.35	2	261	1.6	0.19	11.63
Form 4	34	4974	32.1	25.90	39.10	-	-	-	-	-
Form 5	53	5112	41.2	32.98	49.84	-	-	-	-	-
Ethnicity										
Malay	30	3570	19.8	10.87	33.20	2	280	1.5	0.43	5.42
Chinese	14	1971	12.4	7.88	18.94	4	552	3.5	1.64	7.17
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	157	19080	24.5	19.22	30.64	10	1443	1.9	0.85	4.01
Bumiputera Sarawak	4	409	28.9	9.19	61.99	-	-	-	-	-
Others	19	2394	19.2	11.36	30.47	3	417	3.3	0.79	13.00

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	309	42337	61.6	56.25	66.77	54	7260	10.6	7.90	14.01
Locality of school										
Urban	117	17142	60.8	54.04	67.10	20	2523	8.9	5.57	14.05
Rural	192	25195	62.3	54.29	69.63	34	4737	11.7	8.27	16.31
Sex										
Boys	160	22059	58.1	52.30	63.77	28	3586	9.5	6.44	13.66
Girls	149	20278	66.0	58.12	73.04	26	3674	12.0	7.46	18.60
School category										
Primary	85	15132	60.6	53.29	67.40	20	3358	13.4	9.03	19.53
Secondary	224	27205	62.3	54.86	69.14	34	3902	8.9	6.13	12.83
Class										
Standard 4	17	3713	48.4	33.35	63.69	9	1774	23.1	12.51	38.73
Standard 5	31	6394	66.9	53.21	78.19	2	402	4.2	1.01	15.85
Standard 6	37	5026	64.9	52.02	75.85	9	1182	15.2	7.26	29.25
Form 1	49	5663	64.6	53.19	74.63	10	1051	12.0	5.63	23.75
Form 2	54	6287	69.6	53.55	82.01	5	564	6.2	3.36	11.30
Form 3	39	4903	61.8	50.35	72.12	8	984	12.4	6.08	23.67
Form 4	38	5858	59.4	42.23	74.54	5	698	7.1	2.69	17.34
Form 5	44	4494	55.4	41.68	68.39	6	605	7.5	4.08	13.26
Ethnicity										
Malay	48	6104	61.9	51.27	71.55	11	1586	16.1	9.97	24.94
Chinese	34	5568	60.6	48.40	71.57	8	1027	11.2	4.77	24.00
Indian	-	-	-	-	-	2	252	100.0	100.00	100.00
Bumiputera Sabah	189	25373	61.6	53.95	68.65	25	3390	8.2	5.27	12.61
Bumiputera Sarawak	4	554	47.9	24.18	72.60	1	100	8.7	1.93	31.47
Others	34	4737	67.6	54.11	78.75	7	904	12.9	6.56	23.82

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	126	16667	24.3	19.69	29.52	16	2413	3.5	1.49	8.08
Locality of school										
Urban	53	7850	27.8	22.41	33.98	5	696	2.5	0.84	7.05
Rural	73	8816	21.8	15.68	29.44	11	1717	4.2	1.39	12.23
Sex										
Boys	80	10658	28.1	21.80	35.37	11	1637	4.3	1.67	10.67
Girls	46	6009	19.5	14.74	25.46	5	776	2.5	1.05	5.93
School category										
Primary	26	4862	19.5	14.48	25.63	9	1633	6.5	2.18	18.01
Secondary	100	11805	27.0	21.07	33.92	7	780	1.8	0.84	3.75
Class										
Standard 4	6	1389	18.1	7.94	36.16	4	800	10.4	2.46	34.91
Standard 5	11	2170	22.7	12.91	36.78	3	595	6.2	1.98	17.91
Standard 6	9	1303	16.8	10.58	25.67	2	239	3.1	0.70	12.47
Form 1	15	1740	19.9	12.09	30.86	3	307	3.5	1.27	9.29
Form 2	18	2059	22.8	11.13	41.06	1	120	1.3	0.17	9.62
Form 3	16	1917	24.2	14.28	37.88	1	126	1.6	0.20	11.72
Form 4	23	3307	33.5	19.67	50.96	-	-	-	-	-
Form 5	28	2783	34.3	20.85	50.91	2	226	2.8	0.66	10.97
Ethnicity										
Malay	12	1655	16.8	9.80	27.26	4	511	5.2	2.91	9.09
Chinese	11	2127	23.1	14.14	35.50	3	470	5.1	1.16	19.82
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	89	11137	27.0	21.00	34.03	8	1315	3.2	0.75	12.57
Bumiputera Sarawak	4	502	43.4	25.39	63.40	-	-	-	-	-
Others	10	1246	17.8	8.65	33.08	1	116	1.7	0.18	13.83

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	590	81377	64.1	59.96	68.11	212	28233	22.3	18.97	25.91
Locality of school										
Urban	266	38899	64.5	57.19	71.23	83	12043	20.0	15.61	25.20
Rural	324	42478	63.8	59.25	68.09	129	16190	24.3	19.83	29.44
Sex										
Boys	302	41472	72.0	67.00	76.45	67	9107	15.8	12.22	20.19
Girls	288	39905	57.6	51.32	63.69	145	19127	27.6	22.83	32.99
School category										
Primary	205	35256	67.3	60.86	73.11	54	9338	17.8	14.98	21.06
Secondary	385	46121	61.9	56.60	66.98	158	18896	25.4	20.83	30.52
Class										
Standard 4	51	10028	59.6	45.51	72.35	14	2870	17.1	14.23	20.35
Standard 5	65	12746	73.7	64.96	80.83	13	2701	15.6	9.31	25.00
Standard 6	89	12482	68.3	61.28	74.53	27	3766	20.6	15.03	27.57
Form 1	86	10202	64.2	50.09	76.16	32	3675	23.1	14.47	34.82
Form 2	84	9871	70.4	64.55	75.57	27	3101	22.1	18.21	26.55
Form 3	90	10847	65.1	56.75	72.69	34	3975	23.9	17.09	32.30
Form 4	52	7920	51.2	36.12	66.05	32	4881	31.5	19.38	46.90
Form 5	73	7281	58.6	53.50	63.51	33	3265	26.3	19.66	34.16
Ethnicity										
Malay	78	10336	57.7	45.55	68.97	39	4941	27.6	17.22	41.08
Chinese	71	11284	68.8	59.86	76.53	13	2158	13.2	10.12	16.94
Indian	2	244	68.2	13.63	96.69	1	114	31.8	3.31	86.37
Bumiputera Sabah	393	52497	66.8	62.78	70.57	132	17552	22.3	18.95	26.13
Bumiputera Sarawak	3	408	36.8	12.82	69.75	4	428	38.6	14.72	69.66
Others	43	6608	52.9	41.35	64.09	23	3041	24.3	13.21	40.45

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

Table 3.3.7 : Preferred option to lose body weight among adolescents by socio-demographic characteristics (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
Sabah	37	5472	4.3	3.01	6.15	40	5897	4.6	3.19	6.73
Locality of school										
Urban	18	2804	4.7	2.61	8.15	16	2792	4.6	2.23	9.35
Rural	19	2668	4.0	2.63	6.07	24	3105	4.7	3.47	6.25
Sex										
Boys	20	2922	5.1	3.37	7.57	16	2304	4.0	2.40	6.60
Girls	17	2550	3.7	2.28	5.89	24	3592	5.2	3.34	7.97
School category										
Primary	18	3257	6.2	4.46	8.59	12	2465	4.7	2.06	10.39
Secondary	19	2215	3.0	1.70	5.14	28	3432	4.6	3.52	6.01
Class										
Standard 4	10	2007	11.9	6.18	21.83	3	743	4.4	1.36	13.45
Standard 5	5	886	5.1	2.03	12.35	3	796	4.6	1.48	13.38
Standard 6	3	363	2.0	0.47	7.99	6	926	5.1	1.85	13.13
Form 1	6	631	4.0	1.23	12.08	10	1067	6.7	3.84	11.49
Form 2	4	474	3.4	1.20	9.15	2	266	1.9	0.57	6.12
Form 3	5	658	3.9	1.28	11.51	3	336	2.0	0.47	8.28
Form 4	2	264	1.7	0.46	6.12	9	1379	8.9	4.44	17.09
Form 5	2	188	1.5	0.37	5.97	4	384	3.1	1.45	6.44
Ethnicity										
Malay	5	936	5.2	2.02	12.84	6	848	4.7	1.67	12.68
Chinese	6	763	4.7	2.11	9.96	7	1564	9.5	3.33	24.40
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	18	2527	3.2	1.92	5.34	21	2634	3.4	2.13	5.24
Bumiputera Sarawak	2	272	24.6	5.00	66.83	-	-	-	-	-
Others	6	973	7.8	3.44	16.69	6	851	6.8	2.98	14.79

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	20	2626	2.1	1.23	3.47	4	469	0.4	0.12	1.16
Locality of school										
Urban	11	1514	2.5	1.23	5.05	3	347	0.6	0.15	2.17
Rural	9	1112	1.7	0.80	3.43	1	122	0.2	0.02	1.35
Sex										
Boys	3	375	0.7	0.20	2.13	2	231	0.4	0.09	1.71
Girls	17	2251	3.3	1.82	5.74	2	238	0.3	0.08	1.43
School category										
Primary	4	748	1.4	0.51	3.94	1	122	0.2	0.03	1.69
Secondary	16	1878	2.5	1.41	4.48	3	347	0.5	0.12	1.79
Class										
Standard 4	3	572	3.4	1.30	8.60	-	-	-	-	-
Standard 5	1	176	1.0	0.13	7.38	-	-	-	-	-
Standard 6	-	-	-	-	-	1	122	0.7	0.09	4.99
Form 1	2	217	1.4	0.35	5.19	1	109	0.7	0.09	4.95
Form 2	1	90	0.6	0.08	4.70	1	139	1.0	0.17	5.69
Form 3	5	607	3.6	1.63	7.95	-	-	-	-	-
Form 4	3	481	3.1	0.76	11.80	-	-	-	-	-
Form 5	5	484	3.9	1.97	7.54	1	99	0.8	0.11	5.79
Ethnicity										
Malay	6	737	4.1	1.83	8.99	-	-	-	-	-
Chinese	2	354	2.2	0.34	12.34	-	-	-	-	-
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	10	1224	1.6	0.71	3.36	4	469	0.6	0.20	1.80
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	2	310	2.5	0.64	9.17	-	-	-	-	-

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
Sabah	18	2469	1.9	0.96	3.89	3	338	0.3	0.08	
Locality of school										
Urban	10	1648	2.7	1.10	6.62	2	242	0.4	0.09	
Rural	8	821	1.2	0.46	3.26	1	96	0.1	0.02	
Sex										
Boys	7	1059	1.8	0.64	5.15	1	159	0.3	0.03	
Girls	11	1410	2.0	1.02	4.03	2	179	0.3	0.06	
School category										
Primary	6	1214	2.3	0.74	7.00	-	-	-	-	-
Secondary	12	1254	1.7	0.74	3.81	3	338	0.5	0.14	
Class										
Standard 4	2	592	3.5	0.79	14.36	-	-	-	-	-
Standard 5	-	-	-	-	-	-	-	-	-	-
Standard 6	4	622	3.4	1.43	7.87	-	-	-	-	-
Form 1	-	-	-	-	-	-	-	-	-	-
Form 2	1	90	0.6	0.08	4.70	-	-	-	-	-
Form 3	2	228	1.4	0.37	4.99	-	-	-	-	-
Form 4	3	388	2.5	0.57	10.43	1	159	1.0	0.15	
Form 5	6	548	4.4	1.87	10.04	2	179	1.4	0.32	
Ethnicity										
Malay	1	116	0.6	0.10	3.98	-	-	-	-	-
Chinese	1	278	1.7	0.31	8.77	-	-	-	-	-
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	12	1358	1.7	0.73	4.04	3	338	0.4	0.13	
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	4	716	5.7	1.49	19.60	-	-	-	-	-

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
Sabah	279	37009	52.6	46.09	59.00	133	18570	26.4	22.13	31.13
Locality of school										
Urban	110	15780	53.5	42.81	63.81	54	8305	28.1	20.36	37.48
Rural	169	21228	52.0	43.92	59.90	79	10265	25.1	20.92	29.85
Sex										
Boys	145	19507	50.3	43.89	56.74	78	10873	28.0	22.28	34.65
Girls	134	17501	55.4	45.01	65.27	55	7697	24.3	18.25	31.70
School category										
Primary	61	10712	41.6	35.47	48.07	41	7615	29.6	24.11	35.73
Secondary	218	26296	58.9	51.89	65.57	92	10955	24.5	19.11	30.92
Class										
Standard 4	13	2586	30.7	19.30	45.01	11	2712	32.2	14.27	57.49
Standard 5	22	4533	47.5	31.54	63.95	14	2765	29.0	18.60	42.10
Standard 6	26	3594	46.3	36.61	56.34	16	2138	27.6	21.81	34.18
Form 1	35	4093	47.0	29.78	64.95	25	2814	32.3	19.34	48.72
Form 2	48	5596	63.6	45.88	78.19	20	2321	26.4	15.17	41.75
Form 3	40	4886	58.0	44.07	70.85	12	1543	18.3	9.98	31.25
Form 4	44	6611	63.7	48.29	76.66	13	2005	19.3	13.21	27.32
Form 5	51	5110	61.4	49.13	72.36	22	2271	27.3	17.49	39.92
Ethnicity										
Malay	37	4482	45.4	28.79	63.04	17	2335	23.6	15.34	34.58
Chinese	24	3920	40.7	35.48	46.07	17	3259	33.8	21.14	49.34
Indian	-	-	-	-	-	1	90	35.5	2.64	91.79
Bumiputera Sabah	192	25048	59.5	51.58	66.87	75	9805	23.3	18.45	28.91
Bumiputera Sarawak	5	638	47.0	18.97	77.01	3	418	30.7	9.71	64.67
Others	21	2920	41.1	29.11	54.14	20	2663	37.4	27.78	48.19

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
Sabah	55	8403	11.9	9.13	15.47	48	6394	9.1	7.04	11.65
Locality of school										
Urban	20	3104	10.5	7.49	14.57	19	2328	7.9	4.87	12.54
Rural	35	5300	13.0	8.95	18.44	29	4066	10.0	7.60	12.93
Sex										
Boys	31	4550	11.7	8.31	16.33	30	3834	9.9	7.07	13.67
Girls	24	3854	12.2	7.79	18.59	18	2560	8.1	4.88	13.13
School category										
Primary	26	4679	18.2	14.02	23.25	16	2726	10.6	7.06	15.60
Secondary	29	3724	8.3	6.50	10.65	32	3668	8.2	6.03	11.10
Class										
Standard 4	10	1967	23.3	13.98	36.31	6	1164	13.8	7.65	23.65
Standard 5	7	1399	14.6	9.30	22.32	4	851	8.9	2.67	25.89
Standard 6	9	1314	16.9	11.67	23.94	6	711	9.2	3.29	23.06
Form 1	3	362	4.2	1.72	9.67	13	1441	16.5	9.24	27.85
Form 2	3	344	3.9	1.27	11.35	5	544	6.2	2.44	14.77
Form 3	10	1233	14.6	6.70	29.09	6	755	9.0	4.44	17.31
Form 4	9	1367	13.2	6.68	24.31	3	403	3.9	0.95	14.45
Form 5	4	419	5.0	2.13	11.40	5	524	6.3	2.85	13.34
Ethnicity										
Malay	8	1250	12.7	5.25	27.46	13	1813	18.3	10.56	29.96
Chinese	8	1365	14.2	8.02	23.78	9	1095	11.4	4.43	26.16
Indian	1	163	64.5	8.21	97.36	-	-	-	-	-
Bumiputera Sabah	29	4281	10.2	6.45	15.64	22	2997	7.1	5.33	9.43
Bumiputera Sarawak	2	303	22.3	10.41	41.47	-	-	-	-	-
Others	7	1042	14.6	7.18	27.56	4	489	6.9	2.37	18.29

3.4 Meal pattern among adolescents (Primary 4 to Secondary 5) in Sabah

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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 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 can affect the growth of individuals 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 adolescents in Malaysia (Primary 4 to Secondary 5).

Specific objectives:

- To determine the prevalence of 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 consumed 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 of bringing food or drinks to school.
- To identify common types of food or drink brought to school.
- To determine the prevalence of eating out among adolescents.
- To determine the prevalence of snacking and practice of buying snack out of school area.
- To identify common type of snacks 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 dinner and 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 etc. 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:** including ready-to-eat foods. Ready-to-eat foods are foods that can be eaten immediately after purchase. It consists of cooked food, 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 include buying outside food and eat 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

A total of 2,322 respondents representing 330,463 adolescents in Sabah were selected to participate in the study. The study showed that the percentage of adolescents taking breakfast (35.1%; 95% CI: 29.72, 40.81) on daily basis were low compared to lunch (46.1%; 95% CI: 39.54, 52.83) and dinner (58.1%; 95% CI: 51.23, 64.73). Most of them preferred to consume homemade foods especially for breakfast and dinner. The main reason for skipping their main meals was no appetite. About 64.6% (95% CI: 59.56, 69.33) of them ate and drank

during recess every day on weekdays. Most of the foods (65.6%; 95% CI: 59.06, 71.64) were obtained from school canteens. Majority of the adolescents took afternoon tea and heavy meals after dinners for 1 to 6 days a week; 59.0% (95% CI: 53.77, 64.05) and 68.9% (95% CI: 63.20, 74.16) respectively. About 26.4% (95% CI: 23.34, 29.78) of the adolescents took their heavy meals after dinner at restaurant/kiosk. Fast food was frequently consumed by 83.0% (95% CI: 79.60, 86.01) of the adolescents for 1 to 6 days per week. The survey revealed that the practice of bringing foods and drinks to school daily was 12.7% (95% CI: 9.35, 17.08) and 45.2% (95% CI: 39.68, 50.79). The most popular food frequently brought to school is followed by nasi lemak/fried rice/mixed rice (41.6%; 95% CI: 33.11, 50.62) whereas 86.1% (95% CI: 82.59, 88.96) claimed they usually brought plain water. About 67.0% (95% CI: 62.69, 70.99) of the adolescents spent their pocket money to buy food/drinks. It was found that they occasionally eating out as most of the adolescents reported they were eating out around 1 to 3 times per week. In terms of snacking, most adolescents snacking around 1-3 times per week and the categories of food with the highest consumption were bread/ bun/ sandwich, fish cracker and biscuit. Most of them also bought snack food and/or drink out of school areas 1 to 4 times per week with the highest preference of flavoured drink/carbonated drink (21.6%; 95% CI: 17.62, 26.27). Television and social media constituted the highest percentage of media sources which affected dietary pattern among adolescents in Sabah; which was 36.7% (95% CI: 32.90, 40.64) and 36.3% (95% CI: 33.17, 39.63) respectively.

3.4.5 Discussions/Conclusion

The study revealed that adolescents in Sabah tend to skip main meals especially for breakfast. Did not have appetite and no time to take meals were the main reasons adolescents in Sabah skipped their breakfast and other main meals. The benefit, priority on taking main meals and the misunderstanding knowledge on reducing body weight need to be educated to the adolescents in order to achieve and maintain better health status. Importance of good hydration should also be emphasized to the adolescents as the percentage of those practising bringing water to school is very low. It was found that the adolescents had unhealthy dietary practices; this included having heavy meals after dinner at least once a week, consumption of fast foods and high caloric meals bought outside their schools. Thus, further regulations regarding the sales of food/drink outside school compounds should be strengthened and creative healthy dietary practice messages targeting adolescents should be communicated through the main media such as television and social media.

3.4.6 Recommendation

Taken together from the survey, several recommendations were proposed. Advocacy on proper meal pattern practice among adolescent is crucial therefore, a holistic and comprehensive nutrition intervention should be implemented nation-wide, where every stakeholders need to work together. A generation of healthy adolescents is warranted for a healthy nation. Since most of the adolescents are school-aged individuals, therefore, more

health promotion such as healthy eating habits at home, in school and eating out must be addressed systematically. Positive behavioral changes on dietary pattern need a longer time to be materialised but the support and intervention must be continuous. Ministry of Health and Ministry of Education together with the support and co-operation from Parents and Teachers Association, as well as 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 adolescents on proper daily nutritional intakes especially on main meals.

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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	
Sabah	813	115863	35.1	29.72	40.81	1461	193132	58.4	52.87	63.81
Locality of school										
Urban	409	64047	41.3	32.44	50.68	589	82059	52.9	43.68	61.86
Rural	404	51816	29.6	25.48	34.01	872	111073	63.4	58.73	67.79
Sex										
Boys	417	60382	36.3	29.96	43.10	734	97169	58.4	52.16	64.32
Girls	396	55480	33.8	28.38	39.75	727	95963	58.5	52.46	64.33
Ethnicity										
Malay	91	12516	27.7	21.33	35.10	233	30605	67.7	60.58	74.11
Chinese	174	30029	55.6	46.77	64.18	138	20460	37.9	30.57	45.86
Indian	4	389	32.1	8.84	69.63	7	824	67.9	30.37	91.16
Bumiputera Sabah	448	58675	30.5	27.36	33.87	928	119984	62.4	58.29	66.35
Bumiputera Sarawak	15	2283	47.3	31.36	63.77	17	2086	43.2	27.72	60.16
Others	81	11971	36.3	28.65	44.69	138	19173	58.1	49.18	66.56
School level										
Primary school	318	58645	44.5	35.68	53.72	384	65311	49.6	40.01	59.19
Secondary school	495	57218	28.8	25.19	32.68	1077	127821	64.3	60.90	67.59
Class										
Standard 4	107	22160	50.0	38.75	61.23	97	19911	44.9	32.66	57.82
Standard 5	89	18707	42.9	29.52	57.44	113	22159	50.8	38.69	62.89
Standard 6	122	17778	40.6	32.82	48.85	174	23242	53.1	43.57	62.33
Form 1	113	12892	30.2	23.01	38.40	235	27031	63.2	52.67	72.63
Form 2	120	13379	33.0	24.75	42.37	219	25540	62.9	55.09	70.15
Form 3	85	10292	25.4	19.61	32.20	227	27591	68.1	62.24	73.41
Form 4	71	10275	26.8	19.62	35.55	161	23988	62.7	57.43	67.64
Form 5	106	10381	28.4	21.32	36.65	235	23671	64.7	56.74	71.88
School session										
Morning session	447	66559	35.7	29.31	42.62	767	107530	57.7	50.87	64.17
Evening session	139	16397	33.3	27.81	39.29	257	30976	62.9	57.88	67.67
Morning and evening session	227	32906	34.8	24.34	46.92	436	54516	57.6	46.42	68.10
BMI-for-age status (BAZ)										
Thinness (<-2sd)	65	8925	46.2	35.96	56.68	71	10008	51.8	42.02	61.36
Normal (≥-2sd - ≤+1sd)	557	79437	34.4	29.13	39.98	1042	137556	59.5	53.95	64.79
Overweight (>+1sd - ≤+2sd)	106	14667	31.4	23.86	40.15	210	27870	59.7	52.60	66.48
Obese (>+2sd)	81	12467	38.2	28.57	48.81	137	17603	53.9	43.91	63.61
Height-for-age status (HAZ)										
Stunting (<-2sd)	105	14500	37.0	29.46	45.24	174	22277	56.9	48.90	64.47
Normal (≥-2sd)	704	100995	34.7	29.15	40.79	1286	170761	58.7	52.84	64.40

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
Sabah	158	21468	6.5	4.98	8.44
Locality of school					
Urban	67	9111	5.9	4.23	8.10
Rural	91	12357	7.1	4.78	10.29
Sex					
Boys	65	8920	5.4	3.88	7.36
Girls	93	12549	7.7	5.40	10.74
Ethnicity					
Malay	16	2078	4.6	1.91	10.68
Chinese	23	3475	6.4	4.65	8.85
Indian					
Bumiputera Sabah	101	13613	7.1	5.18	9.61
Bumiputera Sarawak	4	459	9.5	3.06	25.87
Others	14	1844	5.6	3.17	9.67
School level					
Primary school	45	7766	5.9	3.36	10.13
Secondary school	113	13703	6.9	5.28	8.96
Class					
Standard 4	12	2262	5.1	2.61	9.73
Standard 5	14	2719	6.2	2.31	15.80
Standard 6	19	2784	6.4	3.56	11.10
Form 1	24	2835	6.6	3.27	13.00
Form 2	14	1665	4.1	2.02	8.15
Form 3	22	2644	6.5	4.10	10.24
Form 4	27	4010	10.5	7.05	15.30
Form 5	26	2547	7.0	4.08	11.64
School session					
Morning session	90	12414	6.7	4.84	9.09
Evening session	15	1868	3.8	2.37	6.01
Morning and evening session	53	7186	7.6	4.89	11.61
BMI-for-age status (BAZ)					
Thinness (<-2sd)	3	405	2.1	0.62	6.79
Normal (≥-2sd - ≤+1sd)	106	14254	6.2	4.55	8.29
Overweight (>+1sd - ≤+2sd)	30	4120	8.8	5.71	13.41
Obese (>+2sd)	18	2581	7.9	4.65	13.11
Height-for-age status (HAZ)					
Stunting (<-2sd)	19	2407	6.1	3.93	9.48
Normal (≥-2sd)	138	18953	6.5	4.93	8.57

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
Sabah	1472	206199	67.5	59.94	74.19	436	57940	19.0	15.47	23.02
Locality of school										
Urban	700	104380	72.2	65.69	77.87	197	28106	19.4	15.69	23.82
Rural	772	101819	63.2	50.85	74.07	239	29834	18.5	13.13	25.48
Sex										
Boys	735	104381	66.8	58.81	73.92	219	29106	18.6	14.63	23.41
Girls	737	101818	68.2	60.11	75.27	217	28834	19.3	14.94	24.58
Ethnicity										
Malay	225	30889	72.7	64.58	79.53	61	7476	17.6	12.96	23.43
Chinese	232	38256	76.9	70.42	82.32	52	8557	17.2	10.76	26.36
Indian	7	767	63.2	25.35	89.69	2	228	18.8	4.78	51.53
Bumiputera Sabah	848	113685	64.1	53.99	73.11	266	33971	19.2	14.60	24.73
Bumiputera Sarawak	23	3192	73.1	54.94	85.78	6	785	18.0	9.20	32.13
Others	137	19410	63.7	54.30	72.10	49	6924	22.7	17.01	29.65
School level										
Primary school	525	91974	75.5	69.35	80.71	118	21334	17.5	13.07	23.05
Secondary school	947	114225	62.2	51.60	71.67	318	36606	19.9	15.18	25.69
Class										
Standard 4	149	30156	73.6	65.04	80.73	32	6803	16.6	11.63	23.16
Standard 5	152	30999	77.2	69.58	83.33	34	6833	17.0	12.43	22.85
Standard 6	224	30820	75.6	66.98	82.62	52	7698	18.9	11.84	28.77
Form 1	226	26625	67.7	57.63	76.39	54	5898	15.0	9.57	22.75
Form 2	221	25544	66.6	56.49	75.37	45	5173	13.5	8.17	21.45
Form 3	202	25026	66.2	56.46	74.82	54	6372	16.9	11.83	23.48
Form 4	128	19514	57.0	35.69	75.93	61	9218	26.9	19.06	36.52
Form 5	170	17515	51.4	29.46	72.87	104	9944	29.2	16.34	46.56
School session										
Morning session	839	122191	70.9	65.86	75.44	231	32523	18.9	15.59	22.64
Evening session	269	32859	69.8	58.36	79.20	37	4598	9.8	6.00	15.51
Morning and evening session	363	51037	59.3	40.47	75.75	168	20819	24.2	17.26	32.81
BMI-for-age status (BAZ)										
Thinness (<-2sd)	93	13113	69.9	59.13	78.79	23	3206	17.1	11.00	25.55
Normal (≥-2sd - ≤+1sd)	1027	144762	67.4	59.39	74.47	306	40530	18.9	15.16	23.22
Overweight (>+1sd - ≤+2sd)	215	29251	69.2	58.88	77.97	61	8143	19.3	13.81	26.24
Obese (>+2sd)	137	19072	65.1	57.42	72.04	42	5693	19.4	14.72	25.20
Height-for-age status (HAZ)										
Stunting (<-2sd)	158	21905	60.0	49.87	69.35	59	7525	20.6	14.63	28.24
Normal (≥-2sd)	1314	184294	68.6	61.44	74.97	373	50048	18.6	15.28	22.51

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	
Sabah	54	7464	2.4	1.60	3.70	240	26822	8.8	4.79	15.55
Locality of school										
Urban	25	3378	2.3	1.17	4.63	41	4709	3.3	0.81	12.13
Rural	29	4086	2.5	1.52	4.19	199	22113	13.7	7.59	23.58
Sex										
Boys	35	4961	3.2	2.01	4.98	125	13914	8.9	4.45	17.01
Girls	19	2503	1.7	0.97	2.87	115	12908	8.6	4.87	14.88
Ethnicity										
Malay	8	1066	2.5	1.15	5.36	20	2290	5.4	2.57	10.95
Chinese	18	2240	4.5	2.01	9.79	5	605	1.2	0.20	6.97
Indian						2	219	18.0	4.68	49.60
Bumiputera Sabah	26	3859	2.2	1.20	3.93	204	22642	12.8	7.26	21.49
Bumiputera Sarawak										
Others	2	299	1.0	0.22	4.30	9	1067	3.5	1.25	9.45
School level										
Primary school	25	4126	3.4	2.00	5.68	5	720	0.6	0.19	1.79
Secondary school	29	3338	1.8	1.01	3.24	235	26102	14.2	8.51	22.77
Class										
Standard 4	8	1579	3.9	2.71	5.46	1	215	0.5	0.07	3.96
Standard 5	6	1227	3.1	1.15	7.83					
Standard 6	11	1321	3.2	1.30	7.82	4	505	1.2	0.43	3.49
Form 1	12	1278	3.3	1.45	7.13	41	4507	11.5	6.56	19.26
Form 2	8	944	2.5	1.00	5.91	51	5702	14.9	8.96	23.66
Form 3	4	513	1.4	0.58	3.16	47	5372	14.2	7.59	25.08
Form 4	2	332	1.0	0.22	4.11	39	4961	14.5	3.59	43.46
Form 5	3	271	0.8	0.10	6.13	57	5559	16.3	8.33	29.53
School session										
Morning session	30	4683	2.7	1.69	4.33	71	8198	4.8	2.51	8.83
Evening session	12	1372	2.9	1.31	6.34	69	7536	16.0	7.66	30.46
Morning and evening session	12	1408	1.6	0.68	3.87	100	11089	12.9	4.53	31.56
BMI-for-age status (BAZ)										
Thinness (<-2sd)	5	580	3.1	1.35	6.91	12	1547	8.2	3.64	17.59
Normal (≥-2sd - ≤+1sd)	35	4875	2.3	1.44	3.55	186	20612	9.6	5.32	16.69
Overweight (>+1sd - ≤+2sd)	5	671	1.6	0.72	3.47	25	2790	6.6	2.95	14.11
Obese (>+2sd)	9	1338	4.6	2.34	8.72	16	1779	6.1	2.87	12.39
Height-for-age status (HAZ)										
Stunting (<-2sd)	5	751	2.1	0.80	5.19	49	5433	14.9	9.48	22.60
Normal (≥-2sd)	49	6712	2.5	1.62	3.84	190	21295	7.9	4.11	14.75

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	
				Lower	Upper
Sabah	49	7208	2.4	1.71	3.25
Locality of school					
Urban	25	4016	2.8	1.83	4.20
Rural	24	3192	2.0	1.22	3.20
Sex					
Boys	26	3910	2.5	1.65	3.77
Girls	23	3298	2.2	1.32	3.68
Ethnicity					
Malay	5	775	1.8	0.72	4.52
Chinese	1	91	0.2	0.02	1.37
Indian					
Bumiputera Sabah	23	3164	1.8	1.16	2.74
Bumiputera Sarawak	3	392	9.0	2.28	29.46
Others	17	2786	9.1	5.74	14.24
School level					
Primary school	18	3712	3.0	1.90	4.86
Secondary school	31	3496	1.9	1.30	2.78
Class					
Standard 4	9	2203	5.4	2.26	12.28
Standard 5	6	1106	2.8	1.39	5.39
Standard 6	3	403	1.0	0.33	2.89
Form 1	9	1008	2.6	1.44	4.53
Form 2	9	995	2.6	1.47	4.55
Form 3	4	493	1.3	0.39	4.26
Form 4	2	238	0.7	0.18	2.66
Form 5	7	762	2.2	1.16	4.27
School session					
Morning session	32	4787	2.8	1.86	4.12
Evening session	6	718	1.5	0.79	2.93
Morning and evening session	11	1703	2.0	0.95	4.07
BMI-for-age status (BAZ)					
Thinness (<-2sd)	2	324	1.7	0.37	7.59
Normal (≥-2sd - ≤+1sd)	31	4074	1.9	1.40	2.56
Overweight (>+1sd - ≤+2sd)	8	1390	3.3	1.34	7.83
Obese (>+2sd)	8	1420	4.8	2.01	11.21
Height-for-age status (HAZ)					
Stunting (<-2sd)	6	890	2.4	1.03	5.65
Normal (≥-2sd)	43	6317	2.4	1.71	3.23

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	
Sabah	104	13939	7.1	5.54	8.95	677	91011	46.1	42.25	49.94
Locality of school										
Urban	43	5863	7.0	4.83	10.14	260	37016	44.4	36.58	52.60
Rural	61	8077	7.1	5.14	9.65	417	53995	47.3	44.11	50.44
Sex										
Boys	72	9573	9.8	7.75	12.39	306	40679	41.8	36.56	47.14
Girls	32	4367	4.4	3.18	5.96	371	50332	50.3	44.66	55.89
Ethnicity										
Malay	27	3629	11.7	8.04	16.72	125	16588	53.5	49.07	57.79
Chinese	13	1679	8.2	3.70	17.15	51	7697	37.5	27.62	48.63
Indian						3	352	76.0	38.44	94.11
Bumiputera Sabah	57	7531	6.1	4.60	8.03	427	56502	45.7	41.29	50.26
Bumiputera Sarawak	1	118	4.9	0.54	32.40	10	1325	54.4	31.75	75.38
Others	6	982	5.0	2.07	11.71	61	8547	43.7	31.63	56.59
School level										
Primary school	32	5447	8.3	5.44	12.42	176	30259	46.0	38.81	53.42
Secondary school	72	8493	6.4	4.94	8.36	501	60752	46.1	41.69	50.58
Class										
Standard 4	12	2308	11.9	4.55	27.53	43	8743	44.9	31.11	59.57
Standard 5	8	1665	7.3	4.26	12.25	67	12631	55.4	46.05	64.43
Standard 6	12	1474	6.3	2.92	12.98	66	8886	37.8	24.41	53.41
Form 1	21	2237	8.4	4.87	14.06	116	13504	50.6	40.63	60.57
Form 2	19	2228	8.9	4.77	16.03	104	12303	49.2	43.22	55.18
Form 3	14	1710	5.9	3.54	9.72	102	12507	43.3	34.30	52.69
Form 4	10	1504	5.6	2.79	11.04	87	13359	50.0	40.51	59.54
Form 5	8	814	3.3	1.70	6.41	92	9079	37.1	29.92	44.86
School session										
Morning session	54	7603	6.8	5.02	9.23	366	52490	47.2	43.41	50.97
Evening session	29	3599	12.0	8.77	16.29	128	15483	51.8	47.40	56.13
Morning and evening session	21	2738	4.9	2.96	7.91	183	23038	41.0	33.93	48.39
BMI-for-age status (BAZ)										
Thinness (<-2sd)	7	858	8.8	4.00	18.34	32	4349	44.7	32.64	57.45
Normal (≥-2sd - ≤+1sd)	61	8433	6.1	4.58	8.02	498	66768	48.1	43.42	52.89
Overweight (>+1sd - ≤+2sd)	17	2148	7.3	4.06	12.69	99	13549	45.9	37.41	54.57
Obese (>+2sd)	19	2501	12.9	7.81	20.61	48	6346	32.8	26.65	39.54
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	1223	5.4	2.61	10.72	83	10862	47.7	37.04	58.56
Normal (≥-2sd)	93	12716	7.3	5.71	9.25	594	80149	45.9	41.74	50.16

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	
Sabah	491	64908	32.9	28.25	37.83	64	8050	4.1	2.85	5.80
Locality of school										
Urban	205	28440	34.1	24.75	44.98	29	3902	4.7	2.73	7.91
Rural	286	36468	31.9	28.23	35.86	35	4149	3.6	2.30	5.68
Sex										
Boys	248	33449	34.3	29.45	39.57	24	2957	3.0	1.65	5.52
Girls	243	31459	31.4	25.19	38.41	40	5093	5.1	3.49	7.36
Ethnicity										
Malay	56	7391	23.8	20.19	27.88	9	1132	3.6	1.95	6.74
Chinese	56	8548	41.7	29.41	55.10	6	852	4.2	1.17	13.72
Indian	1	111	24.0	5.89	61.56					
Bumiputera Sabah	324	41536	33.6	28.23	39.48	46	5739	4.6	3.07	6.98
Bumiputera Sarawak	6	681	28.0	13.76	48.58					
Others	48	6639	34.0	22.06	48.29	3	328	1.7	0.57	4.81
School level										
Primary school	126	21708	33.0	25.66	41.32	16	2477	3.8	1.65	8.37
Secondary school	365	43200	32.8	27.05	39.07	48	5574	4.2	2.93	6.07
Class										
Standard 4	27	5737	29.5	18.25	43.89	4	740	3.8	1.20	11.43
Standard 5	33	6692	29.4	22.16	37.77	3	613	2.7	0.73	9.38
Standard 6	66	9279	39.5	26.74	53.87	9	1124	4.8	1.31	15.94
Form 1	67	7780	29.2	18.42	42.89	12	1298	4.9	2.80	8.32
Form 2	56	6351	25.4	16.21	37.44	9	1049	4.2	2.09	8.23
Form 3	81	9872	34.1	26.30	42.97	14	1648	5.7	2.78	11.34
Form 4	63	9008	33.7	23.18	46.20	4	709	2.7	0.66	10.02
Form 5	98	10189	41.6	29.01	55.43	9	870	3.6	2.32	5.42
School session										
Morning session	265	36571	32.9	28.46	37.60	30	3970	3.6	2.34	5.39
Evening session	59	6904	23.1	16.23	31.75	14	1552	5.2	2.90	9.12
Morning and evening session	166	21322	37.9	29.70	46.87	20	2529	4.5	2.32	8.55
BMI-for-age status (BAZ)										
Thinness (<-2sd)	19	2901	29.8	19.73	42.37	1	178	1.8	0.24	12.56
Normal (≥-2sd - ≤+1sd)	344	45305	32.7	27.74	38.00	30	3673	2.6	1.71	4.07
Overweight (>+1sd - ≤+2sd)	69	9351	31.7	24.22	40.16	16	1945	6.6	3.83	11.10
Obese (>+2sd)	58	7257	37.5	31.10	44.31	16	2145	11.1	8.08	15.00
Height-for-age status (HAZ)										
Stunting (<-2sd)	54	7179	31.5	25.30	38.47	6	785	3.4	1.36	8.46
Normal (≥-2sd)	436	57635	33.0	28.03	38.42	57	7157	4.1	2.77	6.02

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	
Sabah	66	8009	4.1	2.72	6.01	90	11606	5.9	4.59	7.49
Locality of school										
Urban	27	3527	4.2	2.51	7.06	34	4537	5.4	3.93	7.50
Rural	39	4483	3.9	2.19	6.94	56	7069	6.2	4.39	8.66
Sex										
Boys	48	5832	6.0	4.24	8.39	38	4928	5.1	3.72	6.85
Girls	18	2177	2.2	1.04	4.50	52	6678	6.7	4.86	9.09
Ethnicity										
Malay	4	377	1.2	0.38	3.85	15	1913	6.2	3.74	10.01
Chinese	6	713	3.5	1.76	6.76	6	1015	5.0	1.95	12.01
Indian										
Bumiputera Sabah	45	5372	4.3	2.65	7.06	55	6855	5.5	3.89	7.86
Bumiputera Sarawak	2	212	8.7	1.09	45.21	1	99	4.1	0.45	28.49
Others	9	1335	6.8	3.10	14.35	13	1722	8.8	5.26	14.38
School level										
Primary school	15	2231	3.4	1.51	7.46	21	3620	5.5	3.41	8.77
Secondary school	51	5778	4.4	2.78	6.86	69	7985	6.1	4.57	8.00
Class										
Standard 4	4	782	4.0	0.63	21.56	6	1154	5.9	2.64	12.78
Standard 5	2	384	1.7	0.43	6.30	4	805	3.5	0.56	19.28
Standard 6	9	1065	4.5	2.27	8.84	11	1662	7.1	3.90	12.51
Form 1	7	757	2.8	1.16	6.78	9	1098	4.1	2.11	7.88
Form 2	13	1588	6.4	3.29	11.92	13	1493	6.0	2.88	11.96
Form 3	8	968	3.3	1.25	8.67	19	2205	7.6	4.49	12.66
Form 4	5	715	2.7	1.42	4.98	9	1408	5.3	3.27	8.40
Form 5	18	1750	7.1	2.45	19.06	19	1781	7.3	4.16	12.42
School session										
Morning session	26	3429	3.1	1.95	4.84	54	7205	6.5	4.79	8.69
Evening session	10	1364	4.6	1.75	11.39	8	1000	3.3	1.30	8.32
Morning and evening session	30	3216	5.7	3.13	10.21	28	3400	6.0	4.01	9.02
BMI-for-age status (BAZ)										
Thinness (<-2sd)	6	872	9.0	3.60	20.62	4	566	5.8	2.10	15.13
Normal (≥-2sd - ≤+1sd)	52	6129	4.4	2.80	6.92	66	8386	6.0	4.57	7.96
Overweight (>+1sd - ≤+2sd)	5	670	2.3	0.90	5.57	14	1876	6.4	3.97	10.01
Obese (>+2sd)	3	338	1.7	0.57	5.21	6	777	4.0	1.78	8.81
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	1221	5.4	2.42	11.45	13	1507	6.6	3.90	10.99
Normal (≥-2sd)	55	6788	3.9	2.60	5.78	77	10099	5.8	4.44	7.50

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
Sabah	1091	152014	46.1	39.54	52.83	1278	170140	51.6	45.09	58.08
Locality of school										
Urban	501	76802	49.7	37.00	62.51	535	74363	48.2	35.80	60.75
Rural	590	75212	42.9	38.78	47.16	743	95777	54.7	50.48	58.77
Sex										
Boys	539	75564	45.6	37.99	53.51	647	86607	52.3	44.52	60.01
Girls	552	76451	46.6	39.96	53.34	631	83533	50.9	44.24	57.53
Ethnicity										
Malay	125	17317	38.3	31.40	45.74	209	27136	60.0	52.78	66.88
Chinese	223	37484	69.8	52.00	83.14	104	15308	28.5	16.19	45.15
Indian	5	500	41.2	13.48	75.91	6	713	58.8	24.09	86.52
Bumiputera Sabah	633	81342	42.4	38.86	46.03	801	105473	55.0	51.53	58.40
Bumiputera Sarawak	17	2349	48.7	28.55	69.20	19	2479	51.3	30.80	71.45
Others	88	13023	39.6	29.94	50.13	139	19030	57.9	46.49	68.43
School level										
Primary school	373	68722	52.4	38.71	65.72	359	60276	46.0	33.15	59.31
Secondary school	718	83293	42.0	37.17	46.92	919	109864	55.4	50.15	60.44
Class										
Standard 4	99	21005	48.2	33.96	62.79	108	21414	49.2	36.28	62.17
Standard 5	107	22784	52.3	37.68	66.56	107	20395	46.8	32.89	61.27
Standard 6	167	24932	56.6	39.68	72.06	144	18467	41.9	26.88	58.60
Form 1	130	15068	35.4	30.47	40.60	230	26285	61.7	54.57	68.37
Form 2	152	17079	42.1	31.48	53.47	190	22258	54.8	44.78	64.53
Form 3	140	16862	41.6	35.42	48.02	180	22152	54.6	46.84	62.19
Form 4	107	15460	40.6	31.15	50.72	145	21758	57.1	46.77	66.82
Form 5	189	18824	51.4	40.37	62.30	174	17412	47.5	36.98	58.35
School session										
Morning session	538	77973	42.0	37.07	47.10	731	103266	55.6	50.50	60.63
Evening session	168	19900	40.5	31.36	50.45	226	27305	55.6	46.90	64.04
Morning and evening session	384	54031	57.0	42.05	70.76	321	39568	41.7	28.27	56.56
BMI-for-age status (BAZ)										
Thinness (<-2sd)	60	8238	42.1	29.17	56.14	77	10866	55.5	41.23	68.88
Normal (≥-2sd - ≤+1sd)	778	108730	47.2	40.26	54.24	886	117010	50.8	43.98	57.57
Overweight (>+1sd - ≤+2sd)	142	19688	42.2	35.51	49.25	194	25766	55.3	48.32	62.02
Obese (>+2sd)	107	14992	46.1	37.01	55.55	119	16294	50.1	40.60	59.69
Height-for-age status (HAZ)										
Stunting (<-2sd)	121	16487	41.8	35.11	48.80	172	22010	55.8	49.41	62.00
Normal (≥-2sd)	966	135160	46.7	39.62	53.85	1104	147926	51.1	44.10	58.01

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

Characteristics	Lunch frequency per week				
	Count	Estimated Population	Prevalence (%)	Did not take lunch	
				Lower	Upper
Sabah	59	7486	2.3	1.62	3.17
Locality of school					
Urban	25	3238	2.1	1.18	3.70
Rural	34	4249	2.4	1.63	3.58
Sex					
Boys	26	3366	2.0	1.23	3.35
Girls	33	4120	2.5	1.61	3.90
Ethnicity					
Malay	6	745	1.6	0.75	3.59
Chinese	7	908	1.7	0.54	5.20
Indian					
Bumiputera Sabah	40	4992	2.6	1.89	3.56
Bumiputera Sarawak					
Others	6	842	2.6	1.27	5.10
School level					
Primary school	13	2177	1.7	0.83	3.31
Secondary school	46	5309	2.7	1.89	3.78
Class					
Standard 4	6	1131	2.6	0.85	7.65
Standard 5	2	373	0.9	0.13	5.46
Standard 6	5	673	1.5	0.46	4.91
Form 1	11	1244	2.9	0.99	8.26
Form 2	11	1247	3.1	1.69	5.53
Form 3	14	1539	3.8	1.72	8.19
Form 4	6	895	2.3	1.05	5.15
Form 5	4	385	1.0	0.46	2.38
School session					
Morning session	32	4409	2.4	1.65	3.41
Evening session	16	1874	3.8	2.32	6.22
Morning and evening session	11	1203	1.3	0.55	2.87
BMI-for-age status (BAZ)					
Thinness (<-2sd)	4	481	2.5	0.88	6.67
Normal (≥-2sd - ≤+1sd)	36	4637	2.0	1.43	2.83
Overweight (>+1sd - ≤+2sd)	10	1164	2.5	1.35	4.58
Obese (>+2sd)	9	1204	3.7	2.12	6.40
Height-for-age status (HAZ)					
Stunting (<-2sd)	7	947	2.4	0.88	6.35
Normal (≥-2sd)	52	6539	2.3	1.59	3.20

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	
Sabah	1285	181378	56.9	49.26	64.25	587	78241	24.6	20.99	28.49
Locality of school										
Urban	568	84560	56.4	47.99	64.53	296	41143	27.5	21.52	34.33
Rural	717	96819	57.3	44.97	68.85	291	37098	22.0	18.57	25.79
Sex										
Boys	615	87641	54.9	47.52	62.14	309	41233	25.8	21.63	30.57
Girls	670	93737	58.9	50.51	66.80	278	37008	23.3	19.11	27.98
Ethnicity										
Malay	210	28968	65.6	58.86	71.80	83	10632	24.1	18.48	30.74
Chinese	170	27597	52.7	40.89	64.16	83	12803	24.4	15.99	35.46
Indian	7	827	68.1	35.13	89.41					
Bumiputera Sabah	746	102119	55.4	45.62	64.77	353	45486	24.7	20.53	29.34
Bumiputera Sarawak	19	2572	54.5	40.10	68.19	9	1219	25.8	16.28	38.41
Others	133	19296	60.5	51.15	69.20	59	8101	25.4	19.84	31.94
School level										
Primary school	487	84624	66.7	57.62	74.62	145	25605	20.2	16.25	24.76
Secondary school	798	96754	50.5	41.13	59.75	442	52637	27.5	22.91	32.51
Class										
Standard 4	133	26500	63.0	51.01	73.65	42	8869	21.1	15.62	27.87
Standard 5	150	29943	71.1	61.31	79.24	41	8221	19.5	15.99	23.61
Standard 6	204	28181	65.9	57.44	73.37	62	8514	19.9	13.76	27.89
Form 1	170	20133	49.0	40.44	57.69	118	13390	32.6	26.16	39.80
Form 2	162	18491	47.2	39.90	54.70	108	12852	32.8	25.59	41.00
Form 3	163	20222	52.3	36.70	67.52	87	10522	27.2	17.93	39.06
Form 4	135	20663	56.2	33.83	76.27	57	8618	23.4	19.24	28.21
Form 5	168	17245	47.7	27.53	68.72	72	7255	20.1	12.70	30.28
School session										
Morning session	810	117726	65.7	59.85	71.17	279	39178	21.9	18.10	26.19
Evening session	180	22229	47.5	38.70	56.36	118	14277	30.5	24.38	37.35
Morning and evening session	295	41424	44.7	30.67	59.65	190	24787	26.8	20.97	33.46
BMI-for-age status (BAZ)										
Thinness (<-2sd)	75	10801	57.3	46.04	67.88	36	4880	25.9	18.17	35.48
Normal (≥-2sd - ≤+1sd)	889	125360	56.1	48.27	63.69	416	55513	24.9	21.39	28.67
Overweight (>+1sd - ≤+2sd)	190	26515	59.0	48.30	68.90	83	11248	25.0	18.29	33.23
Obese (>+2sd)	131	18701	60.4	52.13	68.08	49	6312	20.4	13.73	29.16
Height-for-age status (HAZ)										
Stunting (<-2sd)	144	19886	51.9	43.03	60.62	65	8469	22.1	17.84	27.03
Normal (≥-2sd)	1141	161492	57.7	50.11	64.98	519	69486	24.8	20.84	29.31

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	
Sabah	103	14035	4.4	2.95	6.53	286	31048	9.7	4.45	20.03
Locality of school										
Urban	62	8813	5.9	3.39	10.03	46	5241	3.5	0.86	13.10
Rural	41	5222	3.1	2.09	4.54	240	25806	15.3	6.51	31.85
Sex										
Boys	56	7684	4.8	3.12	7.36	142	15486	9.7	4.12	21.18
Girls	47	6351	4.0	2.66	5.94	144	15562	9.8	4.70	19.22
Ethnicity										
Malay	11	1429	3.2	1.68	6.14	22	2411	5.5	2.40	11.96
Chinese	39	5454	10.4	7.43	14.41	7	874	1.7	0.44	6.08
Indian	2	181	14.9	1.77	62.99	2	206	17.0	4.39	47.65
Bumiputera Sabah	40	5432	2.9	1.98	4.36	241	26013	14.1	6.67	27.41
Bumiputera Sarawak	2	321	6.8	1.97	20.97	3	311	6.6	1.23	28.60
Others	9	1217	3.8	1.84	7.74	11	1232	3.9	1.41	10.18
School level										
Primary school	42	6954	5.5	2.90	10.10	3	516	0.4	0.10	1.60
Secondary school	61	7082	3.7	2.34	5.78	283	30532	15.9	7.76	29.89
Class										
Standard 4	11	2062	4.9	2.43	9.65	2	394	0.9	0.25	3.49
Standard 5	6	1377	3.3	1.21	8.55					
Standard 6	25	3514	8.2	4.07	15.87	1	122	0.3	0.04	2.20
Form 1	16	1696	4.1	1.96	8.50	43	4687	11.4	6.66	18.89
Form 2	16	1777	4.5	2.72	7.48	44	4882	12.5	6.96	21.36
Form 3	10	1230	3.2	1.77	5.66	46	5277	13.7	7.05	24.79
Form 4	7	1136	3.1	1.68	5.60	48	6124	16.6	3.97	49.09
Form 5	12	1243	3.4	1.26	9.04	102	9562	26.5	8.44	58.45
School session										
Morning session	47	6573	3.7	2.15	6.19	72	8395	4.7	2.51	8.57
Evening session	17	2063	4.4	2.57	7.45	66	7141	15.2	6.83	30.63
Morning and evening session	39	5399	5.8	3.58	9.35	148	15512	16.7	4.32	47.23
BMI-for-age status (BAZ)										
Thinness (<-2sd)	5	490	2.6	0.68	9.36	12	1547	8.2	3.64	17.46
Normal (≥-2sd - ≤+1sd)	65	8741	3.9	2.63	5.78	218	23462	10.5	4.81	21.43
Overweight (>+1sd - ≤+2sd)	16	2127	4.7	2.25	9.68	34	3554	7.9	2.78	20.50
Obese (>+2sd)	17	2678	8.6	4.70	15.35	19	2200	7.1	3.63	13.43
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	1442	3.8	2.16	6.47	61	6518	17.0	8.57	30.92
Normal (≥-2sd)	92	12594	4.5	2.91	6.91	222	24246	8.7	3.89	18.19

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
Sabah	84	13994	4.4	2.23	8.47
Locality of school					
Urban	53	10067	6.7	2.79	15.29
Rural	31	3927	2.3	1.52	3.54
Sex					
Boys	46	7493	4.7	2.32	9.28
Girls	38	6501	4.1	1.99	8.18
Ethnicity					
Malay	5	707	1.6	0.65	3.90
Chinese	25	5662	10.8	3.67	27.80
Indian					
Bumiputera Sabah	38	5301	2.9	1.82	4.51
Bumiputera Sarawak	2	296	6.3	1.27	25.85
Others	14	2028	6.4	3.01	12.94
School level					
Primary school	43	9250	7.3	2.82	17.53
Secondary school	41	4745	2.5	1.67	3.66
Class					
Standard 4	17	4210	10.0	4.01	22.87
Standard 5	12	2577	6.1	1.57	20.98
Standard 6	14	2463	5.8	1.87	16.40
Form 1	10	1154	2.8	1.01	7.59
Form 2	10	1141	2.9	1.45	5.77
Form 3	11	1389	3.6	1.27	9.75
Form 4	2	244	0.7	0.10	4.23
Form 5	8	816	2.3	0.89	5.60
School session					
Morning session	47	7221	4.0	2.04	7.81
Evening session	10	1135	2.4	1.16	5.01
Morning and evening session	26	5527	6.0	1.75	18.39
BMI-for-age status (BAZ)					
Thinness (<-2sd)	7	1126	6.0	2.03	16.30
Normal (≥-2sd - ≤+1sd)	60	10286	4.6	2.21	9.33
Overweight (>+1sd - ≤+2sd)	10	1500	3.3	1.35	8.00
Obese (>+2sd)	7	1082	3.5	1.33	8.88
Height-for-age status (HAZ)					
Stunting (<-2sd)	11	2013	5.3	1.58	16.04
Normal (≥-2sd)	73	11981	4.3	2.26	7.95

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	
Sabah	120	17239	10.6	8.05	13.78	648	86117	52.9	48.89	56.78
Locality of school										
Urban	52	8168	11.5	8.90	14.67	260	36672	51.5	45.00	57.95
Rural	68	9071	9.9	6.18	15.45	388	49444	53.9	48.94	58.78
Sex										
Boys	83	12109	14.5	10.77	19.26	313	41693	50.0	44.95	54.96
Girls	37	5130	6.5	4.18	9.85	335	44424	55.9	52.12	59.61
Ethnicity										
Malay	24	3176	12.0	7.15	19.53	109	14071	53.3	45.89	60.52
Chinese	14	2654	18.4	9.33	33.20	30	4741	32.9	20.47	48.40
Indian						3	306	69.7	16.40	96.42
Bumiputera Sabah	70	9602	9.5	7.05	12.77	428	56348	55.9	52.03	59.76
Bumiputera Sarawak	2	334	14.1	3.14	45.58	10	1294	54.8	31.09	76.45
Others	10	1474	7.9	3.55	16.79	68	9357	50.4	44.58	56.12
School level										
Primary school	44	7788	13.7	9.07	20.11	179	29506	51.8	42.72	60.80
Secondary school	76	9451	8.9	6.38	12.33	469	56610	53.4	49.81	56.97
Class										
Standard 4	15	3076	14.6	7.61	26.20	48	9408	44.7	31.22	58.93
Standard 5	12	2414	12.8	6.42	23.77	57	10798	57.1	40.36	72.33
Standard 6	17	2298	13.5	8.49	20.94	74	9301	54.8	44.24	65.00
Form 1	18	2071	8.2	4.22	15.42	125	14555	57.8	49.59	65.63
Form 2	14	1602	7.5	4.15	13.30	98	11688	55.0	45.82	63.78
Form 3	17	2171	9.7	5.66	16.28	94	11561	51.9	45.68	58.06
Form 4	15	2295	11.0	6.72	17.47	75	11213	53.7	48.33	59.01
Form 5	12	1312	8.0	3.30	18.15	77	7592	46.3	38.73	54.03
School session										
Morning session	83	12307	12.3	9.41	15.98	373	52511	52.6	47.82	57.28
Evening session	20	2463	9.1	4.98	16.20	119	14571	54.1	47.22	60.88
Morning and evening session	17	2469	6.8	3.70	12.29	156	19035	52.7	45.08	60.15
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	1606	15.8	8.25	28.19	30	4210	41.5	31.13	52.59
Normal (≥-2sd - ≤+1sd)	77	11041	9.9	7.51	13.03	468	61599	55.4	51.80	59.04
Overweight (>+1sd - ≤+2sd)	15	2026	8.3	4.84	13.78	101	13574	55.4	46.26	64.21
Obese (>+2sd)	17	2567	15.1	8.86	24.57	49	6733	39.6	30.09	50.04
Height-for-age status (HAZ)										
Stunting (<-2sd)	13	1681	8.1	3.75	16.79	87	11015	53.3	44.71	61.74
Normal (≥-2sd)	107	15558	11.0	8.32	14.28	561	75102	52.9	48.22	57.45

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	
Sabah	201	25925	15.9	13.66	18.46	88	11498	7.1	5.20	9.51
Locality of school										
Urban	76	9850	13.8	10.22	18.46	42	5868	8.2	4.94	13.45
Rural	125	16075	17.5	15.55	19.69	46	5630	6.1	4.60	8.14
Sex										
Boys	107	14329	17.2	14.25	20.55	38	5223	6.3	4.14	9.36
Girls	94	11596	14.6	11.59	18.20	50	6275	7.9	5.65	10.94
Ethnicity										
Malay	30	4002	15.2	11.76	19.31	15	1984	7.5	4.77	11.64
Chinese	25	3192	22.2	15.79	30.23	5	900	6.3	1.18	27.10
Indian	1	133	30.3	3.58	83.60					
Bumiputera Sabah	122	15742	15.6	12.60	19.22	56	6971	6.9	4.98	9.53
Bumiputera Sarawak	2	213	9.0	2.19	30.58	2	321	13.6	2.99	44.51
Others	21	2643	14.2	7.89	24.29	10	1322	7.1	3.43	14.16
School level										
Primary school	50	8359	14.7	12.19	17.57	20	3417	6.0	2.95	11.83
Secondary school	151	17566	16.6	13.50	20.18	68	8080	7.6	5.63	10.25
Class										
Standard 4	17	3463	16.4	11.30	23.29	9	1762	8.4	3.26	19.83
Standard 5	10	1923	10.2	6.51	15.53	4	791	4.2	1.01	15.71
Standard 6	23	2973	17.5	10.86	27.04	7	865	5.1	2.04	12.16
Form 1	32	3615	14.4	10.02	20.16	12	1331	5.3	3.10	8.87
Form 2	30	3514	16.5	10.48	25.08	15	1783	8.4	3.65	18.09
Form 3	35	4113	18.5	13.20	25.22	14	1721	7.7	3.42	16.52
Form 4	22	3059	14.7	8.98	23.00	8	1345	6.4	2.68	14.68
Form 5	32	3265	19.9	14.54	26.63	19	1902	11.6	9.52	14.05
School session										
Morning session	113	15338	15.4	12.96	18.10	42	5942	5.9	3.99	8.78
Evening session	38	4524	16.8	9.90	27.07	22	2608	9.7	6.77	13.69
Morning and evening session	50	6064	16.8	12.68	21.88	24	2947	8.2	5.21	12.55
BMI-for-age status (BAZ)										
Thinness (<-2sd)	10	1347	13.3	6.30	25.80	3	598	5.9	1.96	16.36
Normal (≥-2sd - ≤+1sd)	134	17283	15.6	12.82	18.75	39	4834	4.4	3.13	6.02
Overweight (>+1sd - ≤+2sd)	34	4366	17.8	13.48	23.20	23	2924	11.9	7.81	17.83
Obese (>+2sd)	22	2835	16.7	10.68	25.11	22	3032	17.8	11.25	27.13
Height-for-age status (HAZ)										
Stunting (<-2sd)	20	2404	11.6	7.09	18.53	9	1159	5.6	2.70	11.30
Normal (≥-2sd)	180	23427	16.5	14.06	19.24	78	10230	7.2	5.02	10.22

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	
Sabah	82	10694	6.6	4.96	8.63	85	11464	7.0	5.39	9.13
Locality of school										
Urban	44	5816	8.2	5.55	11.86	35	4828	6.8	4.35	10.43
Rural	38	4878	5.3	3.70	7.59	50	6636	7.2	5.21	9.96
Sex										
Boys	50	6195	7.4	5.05	10.78	30	3914	4.7	3.15	6.92
Girls	32	4499	5.7	3.84	8.27	55	7550	9.5	6.98	12.81
Ethnicity										
Malay	12	1556	5.9	3.32	10.26	13	1623	6.1	3.87	9.61
Chinese	11	1494	10.4	4.82	20.94	11	1409	9.8	4.54	19.88
Indian										
Bumiputera Sabah	48	6237	6.2	4.15	9.14	43	5851	5.8	4.04	8.28
Bumiputera Sarawak	1	100	4.2	0.51	27.67	1	100	4.2	0.51	27.67
Others	10	1307	7.0	3.75	12.82	17	2479	13.3	7.55	22.50
School level										
Primary school	21	3588	6.3	3.99	9.82	24	4285	7.5	4.58	12.13
Secondary school	61	7106	6.7	4.71	9.46	61	7179	6.8	4.98	9.15
Class										
Standard 4	9	1723	8.2	4.57	14.20	8	1634	7.8	2.22	23.77
Standard 5	6	1131	6.0	1.54	20.57	10	1859	9.8	5.93	15.86
Standard 6	6	735	4.3	1.56	11.44	6	791	4.7	2.36	9.02
Form 1	17	1818	7.2	4.41	11.62	16	1785	7.1	4.00	12.25
Form 2	13	1446	6.8	2.43	17.61	11	1231	5.8	2.83	11.47
Form 3	12	1520	6.8	3.18	14.04	10	1189	5.3	2.90	9.63
Form 4	9	1311	6.3	2.89	13.09	10	1655	7.9	3.52	16.88
Form 5	10	1011	6.2	3.62	10.30	14	1319	8.0	4.22	14.79
School session										
Morning session	40	5723	5.7	3.96	8.22	56	8060	8.1	5.72	11.26
Evening session	14	1626	6.0	2.49	13.95	9	1129	4.2	1.88	9.10
Morning and evening session	28	3346	9.3	6.66	12.73	20	2275	6.3	3.47	11.15
BMI-for-age status (BAZ)										
Thinness (<-2sd)	7	819	8.1	3.33	18.26	11	1575	15.5	8.00	27.93
Normal (≥-2sd - ≤+1sd)	64	8580	7.7	5.85	10.14	59	7755	7.0	4.93	9.79
Overweight (>+1sd - ≤+2sd)	5	635	2.6	0.93	7.03	7	972	4.0	1.86	8.28
Obese (>+2sd)	6	660	3.9	1.53	9.54	8	1162	6.8	3.40	13.27
Height-for-age status (HAZ)										
Stunting (<-2sd)	17	2213	10.7	6.38	17.45	15	2185	10.6	4.72	22.03
Normal (≥-2sd)	65	8481	6.0	4.39	8.06	70	9279	6.5	5.16	8.24

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	
Sabah	1383	191007	58.1	51.23	64.73	973	129986	39.6	33.39	46.08
Locality of school										
Urban	650	97130	62.8	49.49	74.39	389	54744	35.4	24.38	48.19
Rural	733	93877	54.0	49.25	58.67	584	75242	43.3	39.20	47.45
Sex										
Boys	673	93350	56.6	48.59	64.27	510	68878	41.8	34.30	49.62
Girls	710	97657	59.7	52.89	66.12	463	61108	37.3	31.55	43.53
Ethnicity										
Malay	149	19839	44.8	36.72	53.20	178	23625	53.4	44.90	61.65
Chinese	264	43023	79.4	65.96	88.41	67	10526	19.4	10.94	32.10
Indian	7	792	65.3	38.67	84.87	4	421	34.7	15.13	61.33
Bumiputera Sabah	814	106113	55.6	51.07	59.98	610	79685	41.7	37.86	45.71
Bumiputera Sarawak	20	2715	56.2	40.09	71.14	15	1951	40.4	24.35	58.85
Others	129	18525	56.0	48.00	63.63	99	13778	41.6	35.26	48.27
School level										
Primary school	459	82344	62.6	49.09	74.38	274	46978	35.7	24.54	48.69
Secondary school	924	108662	55.2	48.31	61.81	699	83008	42.1	35.98	48.54
Class										
Standard 4	122	25835	59.0	42.97	73.32	84	16647	38.0	25.06	52.94
Standard 5	127	26354	60.5	45.67	73.64	86	16640	38.2	25.02	53.39
Standard 6	210	30155	68.2	56.33	78.10	104	13691	31.0	21.43	42.45
Form 1	187	21776	51.3	43.02	59.48	174	19763	46.5	38.02	55.28
Form 2	212	23953	59.5	46.16	71.56	134	15870	39.4	28.15	51.94
Form 3	191	23273	57.9	47.39	67.76	131	15895	39.6	30.53	49.35
Form 4	123	18456	49.0	38.25	59.81	119	17521	46.5	36.86	56.41
Form 5	211	21204	58.2	49.67	66.28	141	13959	38.3	30.80	46.44
School session										
Morning session	694	100869	54.5	48.31	60.46	569	80182	43.3	37.77	48.97
Evening session	242	28682	58.5	47.97	68.31	162	19742	40.3	30.47	50.90
Morning and evening session	446	61345	65.1	50.82	77.15	242	30062	31.9	21.46	44.57
BMI-for-age status (BAZ)										
Thinness (<-2sd)	90	12506	64.5	48.49	77.87	47	6495	33.5	21.19	48.59
Normal (≥-2sd - ≤+1sd)	979	135068	58.9	51.64	65.72	677	90280	39.3	32.80	46.29
Overweight (>+1sd - ≤+2sd)	178	24277	52.2	44.41	59.88	153	20421	43.9	37.25	50.79
Obese (>+2sd)	133	18884	57.8	48.99	66.20	93	12493	38.3	30.37	46.83
Height-for-age status (HAZ)										
Stunting (<-2sd)	166	21997	56.0	49.16	62.65	124	15997	40.7	34.15	47.68
Normal (≥-2sd)	1214	168737	58.4	51.18	65.35	846	113691	39.4	32.86	46.29

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	
Sabah	60	7578	2.3	1.52	3.48
Locality of school					
Urban	21	2838	1.8	1.24	2.71
Rural	39	4740	2.7	1.49	4.95
Sex					
Boys	21	2714	1.6	0.92	2.92
Girls	39	4865	3.0	1.95	4.52
Ethnicity					
Malay	6	801	1.8	0.88	3.67
Chinese	4	667	1.2	0.50	3.01
Indian					
Bumiputera Sabah	43	5148	2.7	1.60	4.52
Bumiputera Sarawak	1	162	3.4	0.42	22.13
Others	6	800	2.4	1.07	5.36
School level					
Primary school	13	2233	1.7	0.87	3.28
Secondary school	47	5346	2.7	1.65	4.44
Class					
Standard 4	7	1307	3.0	1.38	6.33
Standard 5	3	558	1.3	0.33	4.88
Standard 6	3	367	0.8	0.29	2.34
Form 1	8	922	2.2	1.18	3.95
Form 2	4	436	1.1	0.22	5.27
Form 3	9	1021	2.5	1.19	5.34
Form 4	13	1704	4.5	1.46	13.12
Form 5	13	1263	3.5	2.04	5.83
School session					
Morning session	32	4196	2.3	1.51	3.38
Evening session	5	602	1.2	0.47	3.19
Morning and evening session	23	2780	3.0	1.22	7.00
BMI-for-age status (BAZ)					
Thinness (<-2sd)	3	377	1.9	0.62	5.90
Normal (≥-2sd - ≤+1sd)	33	4120	1.8	1.09	2.96
Overweight (>+1sd - ≤+2sd)	14	1808	3.9	2.05	7.25
Obese (>+2sd)	10	1274	3.9	1.91	7.82
Height-for-age status (HAZ)					
Stunting (<-2sd)	9	1272	3.2	1.55	6.66
Normal (≥-2sd)	51	6306	2.2	1.45	3.29

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	1764	246425	77.7	70.47	83.60	185	26768	8.4	6.90	10.28
Locality of school										
Urban	832	123103	82.0	77.32	85.97	104	15556	10.4	8.16	13.09
Rural	932	123322	73.8	61.01	83.56	81	11212	6.7	5.25	8.55
Sex										
Boys	846	119938	75.0	67.45	81.35	119	16262	10.2	8.34	12.36
Girls	918	126487	80.4	72.73	86.37	66	10506	6.7	4.50	9.81
Ethnicity										
Malay	253	34061	79.7	73.25	84.86	32	4501	10.5	7.18	15.17
Chinese	264	43530	82.6	77.09	86.97	43	6719	12.7	9.95	16.19
Indian	9	1011	83.4	47.00	96.59					
Bumiputera Sabah	1033	138800	75.4	64.87	83.62	88	12552	6.8	5.45	8.51
Bumiputera Sarawak	24	3194	68.5	53.63	80.28	4	534	11.5	5.26	23.17
Others	181	25828	81.4	72.61	87.86	18	2462	7.8	4.23	13.81
School level										
Primary school	608	107240	84.1	81.27	86.53	73	12966	10.2	7.85	13.06
Secondary school	1156	139185	73.4	62.14	82.32	112	13802	7.3	5.56	9.48
Class										
Standard 4	157	32569	77.0	69.60	83.06	33	6761	16.0	11.31	22.12
Standard 5	182	36853	87.4	80.54	92.12	14	2675	6.3	3.03	12.83
Standard 6	269	37818	87.7	83.97	90.68	26	3530	8.2	5.50	12.03
Form 1	257	30270	74.3	66.74	80.70	34	3727	9.2	5.38	15.13
Form 2	263	30333	76.6	67.34	83.82	23	2842	7.2	3.83	13.04
Form 3	241	29683	76.7	66.46	84.52	22	2625	6.8	4.23	10.69
Form 4	167	25582	72.0	46.52	88.39	19	3120	8.8	4.50	16.44
Form 5	228	23317	66.7	37.56	86.94	14	1488	4.3	1.82	9.63
School session										
Morning session	1013	146057	81.8	79.06	84.31	104	15768	8.8	7.08	10.96
Evening session	287	34925	72.5	63.32	80.04	33	4267	8.9	4.88	15.53
Morning and evening session	463	65333	72.4	49.38	87.54	48	6733	7.5	5.07	10.84
BMI-for-age status (BAZ)										
Thinness (<-2sd)	103	14382	77.0	70.42	82.55	12	1672	9.0	5.24	14.90
Normal (≥-2sd - ≤+1sd)	1230	172090	77.3	69.68	83.49	128	18573	8.3	6.64	10.44
Overweight (>+1sd - ≤+2sd)	262	36103	81.5	72.38	88.17	21	3214	7.3	4.54	11.40
Obese (>+2sd)	168	23741	76.6	68.55	83.05	24	3309	10.7	6.72	16.55
Height-for-age status (HAZ)										
Stunting (<-2sd)	200	27096	71.7	61.78	79.95	13	1867	4.9	2.66	9.02
Normal (≥-2sd)	1563	219220	78.6	71.94	84.10	172	24901	8.9	7.35	10.82

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	276	30168	9.5	4.44	19.22	101	13725	4.3	3.28	5.70
Locality of school										
Urban	45	5109	3.4	0.94	11.63	43	6272	4.2	2.84	6.11
Rural	231	25060	15.0	6.52	30.86	58	7453	4.5	3.00	6.58
Sex										
Boys	144	15850	9.9	4.67	19.84	56	7779	4.9	3.49	6.75
Girls	132	14318	9.1	4.18	18.71	45	5945	3.8	2.57	5.53
Ethnicity										
Malay	21	2309	5.4	2.48	11.35	15	1886	4.4	2.25	8.46
Chinese	8	902	1.7	0.46	6.12	9	1563	3.0	1.70	5.12
Indian	2	202	16.6	3.41	53.00					
Bumiputera Sabah	232	25250	13.7	6.56	26.47	58	7408	4.0	2.75	5.87
Bumiputera Sarawak	5	632	13.5	5.34	30.30	2	305	6.5	1.34	26.47
Others	8	873	2.8	0.88	8.26	17	2562	8.1	5.14	12.47
School level										
Primary school	9	1446	1.1	0.61	2.11	32	5899	4.6	3.20	6.63
Secondary school	267	28722	15.2	7.26	28.95	69	7826	4.1	2.77	6.11
Class										
Standard 4	2	414	1.0	0.26	3.57	13	2544	6.0	2.73	12.76
Standard 5	2	421	1.0	0.29	3.32	11	2201	5.2	3.04	8.82
Standard 6	5	612	1.4	0.53	3.77	8	1154	2.7	1.50	4.74
Form 1	46	5000	12.3	7.24	20.08	16	1724	4.2	2.02	8.64
Form 2	44	4870	12.3	6.79	21.24	14	1567	4.0	2.17	7.10
Form 3	45	5214	13.5	7.34	23.42	10	1187	3.1	1.34	6.84
Form 4	40	5016	14.1	2.72	49.19	13	1805	5.1	2.67	9.47
Form 5	92	8621	24.7	7.11	58.32	16	1543	4.4	2.62	7.34
School session										
Morning session	68	8068	4.5	2.64	7.64	59	8598	4.8	3.74	6.19
Evening session	69	7449	15.5	6.75	31.58	13	1558	3.2	1.40	7.28
Morning and evening session	139	14651	16.2	4.18	46.26	29	3569	4.0	2.28	6.78
BMI-for-age status (BAZ)										
Thinness (<-2sd)	9	1055	5.7	2.39	12.77	10	1559	8.4	4.36	15.42
Normal (≥-2sd - ≤+1sd)	211	22901	10.3	4.84	20.55	66	9004	4.0	2.97	5.48
Overweight (>+1sd - ≤+2sd)	33	3627	8.2	3.28	19.00	12	1329	3.0	1.51	5.88
Obese (>+2sd)	19	2217	7.2	3.48	14.13	12	1738	5.6	2.66	11.44
Height-for-age status (HAZ)										
Stunting (<-2sd)	53	5714	15.1	8.25	26.12	22	3091	8.2	4.83	13.53
Normal (≥-2sd)	219	24087	8.6	3.94	17.89	78	10539	3.8	2.81	5.08

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	
Sabah	97	13490	10.5	7.51	14.45	549	72943	56.7	53.26	60.02
Locality of school										
Urban	44	6326	11.8	7.63	17.79	205	29062	54.2	51.59	56.74
Rural	53	7164	9.5	5.88	15.12	344	43881	58.4	53.04	63.66
Sex										
Boys	67	9102	13.6	9.91	18.38	262	35406	52.9	49.22	56.56
Girls	30	4388	7.1	4.37	11.34	287	37537	60.7	55.90	65.38
Ethnicity										
Malay	20	2917	12.7	7.97	19.51	102	13599	59.0	52.65	65.08
Chinese	8	1242	12.3	3.48	35.36	30	4834	47.9	34.58	61.52
Indian	1	107	34.6	3.74	87.81	2	203	65.4	12.19	96.26
Bumiputera Sabah	52	7093	8.9	6.32	12.45	353	45726	57.5	52.94	61.98
Bumiputera Sarawak	2	303	16.5	2.29	62.59	8	985	53.6	32.50	73.56
Others	14	1828	13.1	7.45	22.02	54	7597	54.5	43.81	64.73
School level										
Primary school	33	5593	12.2	6.80	21.04	155	26247	57.4	50.86	63.76
Secondary school	64	7897	9.5	6.54	13.64	394	46696	56.2	52.43	59.99
Class										
Standard 4	14	2736	16.7	9.60	27.55	40	7851	48.0	39.80	56.35
Standard 5	8	1508	9.4	3.03	25.52	53	10260	63.8	48.55	76.73
Standard 6	11	1349	10.2	6.70	15.13	62	8136	61.3	49.74	71.73
Form 1	15	1639	8.6	4.63	15.51	103	11942	62.9	54.01	70.93
Form 2	15	1809	11.7	6.74	19.39	79	9434	60.8	49.37	71.07
Form 3	14	1677	10.4	4.45	22.34	75	9070	56.1	43.60	67.87
Form 4	13	2011	11.1	5.74	20.50	59	8642	47.8	43.17	52.54
Form 5	7	760	5.3	2.11	12.79	78	7608	53.3	44.92	61.56
School session										
Morning session	70	10283	13.0	9.04	18.31	310	43696	55.2	49.87	60.35
Evening session	14	1735	9.1	4.89	16.24	97	11849	62.0	55.67	67.93
Morning and evening session	13	1472	4.8	2.26	10.09	142	17398	57.2	52.94	61.41
BMI-for-age status (BAZ)										
Thinness (<-2sd)	5	650	10.7	4.15	24.80	33	4602	75.6	61.24	85.89
Normal (≥-2sd - ≤+1sd)	69	9483	10.7	7.94	14.30	388	51292	57.9	53.90	61.88
Overweight (>+1sd - ≤+2sd)	10	1496	7.3	3.47	14.60	86	11586	56.3	45.56	66.50
Obese (>+2sd)	13	1861	14.1	7.89	23.79	40	5274	39.8	28.28	52.64
Height-for-age status (HAZ)										
Stunting (<-2sd)	9	1189	7.5	3.83	14.27	79	10278	65.1	53.75	74.89
Normal (≥-2sd)	88	12301	10.9	7.94	14.85	468	62476	55.5	51.33	59.54

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	
Sabah	110	14567	11.3	9.03	14.10	134	17469	13.6	10.64	17.16
Locality of school										
Urban	41	5639	10.5	7.76	14.09	54	7615	14.2	9.35	20.98
Rural	69	8928	11.9	8.66	16.11	80	9855	13.1	9.78	17.40
Sex										
Boys	76	9985	14.9	11.32	19.41	54	7408	11.1	8.67	14.04
Girls	34	4582	7.4	4.94	10.98	80	10062	16.3	11.66	22.27
Ethnicity										
Malay	21	2803	12.2	7.69	18.71	20	2478	10.8	5.92	18.74
Chinese	8	1085	10.8	6.24	17.91	8	1476	14.6	6.84	28.56
Indian										
Bumiputera Sabah	72	9443	11.9	8.95	15.61	89	11138	14.0	10.88	17.86
Bumiputera Sarawak						4	548	29.8	11.99	57.03
Others	9	1236	8.9	4.38	17.12	13	1830	13.1	7.89	21.03
School level										
Primary school	30	5121	11.2	8.47	14.69	29	5149	11.3	6.30	19.35
Secondary school	80	9446	11.4	8.30	15.41	105	12320	14.8	11.95	18.29
Class										
Standard 4	11	2177	13.3	8.05	21.24	9	1789	10.9	5.35	21.07
Standard 5	8	1620	10.1	5.27	18.41	8	1543	9.6	2.87	27.62
Standard 6	11	1324	10.0	4.31	21.43	12	1817	13.7	6.93	25.27
Form 1	14	1512	8.0	4.39	14.02	19	2175	11.4	7.75	16.60
Form 2	16	1944	12.5	8.48	18.10	14	1577	10.2	6.02	16.62
Form 3	15	1871	11.6	6.81	18.98	23	2767	17.1	11.41	24.86
Form 4	19	2546	14.1	6.69	27.30	21	3071	17.0	10.28	26.80
Form 5	16	1574	11.0	6.83	17.33	28	2731	19.1	13.28	26.81
School session										
Morning session	64	8778	11.1	8.44	14.43	73	9762	12.3	8.84	16.93
Evening session	14	1727	9.0	6.69	12.09	26	3091	16.2	9.65	25.82
Morning and evening session	32	4062	13.4	8.60	20.17	35	4617	15.2	10.14	22.13
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	441	7.2	2.35	20.25					
Normal (≥-2sd - ≤+1sd)	82	10524	11.9	8.86	15.77	69	9361	10.6	7.76	14.25
Overweight (>+1sd - ≤+2sd)	15	2175	10.6	6.42	16.92	35	4085	19.9	12.39	30.27
Obese (>+2sd)	10	1427	10.8	5.92	18.83	29	3914	29.6	20.07	41.22
Height-for-age status (HAZ)										
Stunting (<-2sd)	14	1854	11.7	7.11	18.75	9	1112	7.0	3.53	13.52
Normal (≥-2sd)	96	12713	11.3	8.81	14.36	124	16249	14.4	11.22	18.36

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
Sabah	28	4172	3.2	2.17	4.81	50	6078	4.7	3.05	7.25
Locality of school										
Urban	16	2392	4.5	2.77	7.11	20	2608	4.9	2.52	9.16
Rural	12	1780	2.4	1.35	4.14	30	3470	4.6	2.55	8.24
Sex										
Boys	16	2280	3.4	2.15	5.35	22	2740	4.1	2.36	7.03
Girls	12	1892	3.1	1.58	5.83	28	3338	5.4	3.23	8.88
Ethnicity										
Malay	5	750	3.3	1.30	7.88	5	500	2.2	0.57	7.86
Chinese	5	736	7.3	2.39	20.19	5	718	7.1	1.61	26.41
Indian										
Bumiputera Sabah	15	2189	2.8	1.59	4.73	32	3899	4.9	2.85	8.30
Bumiputera Sarawak										
Others	3	496	3.6	1.02	11.64	8	960	6.9	3.09	14.64
School level										
Primary school	12	2193	4.8	2.97	7.67	8	1395	3.1	1.30	6.98
Secondary school	16	1979	2.4	1.46	3.86	42	4684	5.6	3.58	8.77
Class										
Standard 4	6	1168	7.1	4.54	11.05	3	629	3.8	1.40	10.12
Standard 5	4	776	4.8	2.19	10.29	2	371	2.3	0.50	9.96
Standard 6	2	249	1.9	0.54	6.36	3	395	3.0	1.01	8.44
Form 1	9	985	5.2	2.29	11.30	7	743	3.9	2.00	7.51
Form 2	1	107	0.7	0.10	4.48	6	658	4.2	1.75	9.89
Form 3	1	126	0.8	0.11	5.45	6	658	4.1	1.45	10.89
Form 4	4	635	3.5	1.53	7.86	8	1159	6.4	2.39	16.08
Form 5	1	126	0.9	0.10	7.28	15	1466	10.3	5.18	19.35
School session										
Morning session	17	2711	3.4	2.12	5.49	31	3971	5.0	3.08	8.07
Evening session	4	460	2.4	0.92	6.15	2	255	1.3	0.45	3.87
Morning and evening session	7	1001	3.3	1.31	8.02	17	1852	6.1	2.51	14.05
BMI-for-age status (BAZ)										
Thinness (<-2sd)						3	393	6.5	2.61	15.09
Normal (≥-2sd - ≤+1sd)	22	3322	3.8	2.30	6.06	37	4539	5.1	3.07	8.45
Overweight (>+1sd - ≤+2sd)	2	394	1.9	0.42	8.31	7	837	4.1	1.72	9.32
Obese (>+2sd)	4	455	3.4	1.39	8.23	3	309	2.3	0.71	7.37
Height-for-age status (HAZ)										
Stunting (<-2sd)	6	788	5.0	2.07	11.55	4	578	3.7	1.25	10.18
Normal (≥-2sd)	22	3384	3.0	1.75	5.12	46	5501	4.9	3.00	7.86

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	
Sabah	1539	213833	64.6	59.56	69.33	830	108696	32.8	28.73	37.23
Locality of school										
Urban	721	106752	68.6	61.94	74.58	322	45576	29.3	23.89	35.35
Rural	818	107081	61.1	54.18	67.51	508	63119	36.0	30.58	41.78
Sex										
Boys	749	104120	62.6	57.86	67.04	429	57445	34.5	30.58	38.67
Girls	790	109713	66.7	60.37	72.41	401	51250	31.1	26.12	36.65
Ethnicity										
Malay	193	26294	58.2	46.41	69.08	133	16996	37.6	28.85	47.26
Chinese	242	40147	74.0	64.98	81.43	83	12754	23.5	16.63	32.17
Indian	7	812	66.9	40.56	85.71	4	401	33.1	14.29	59.44
Bumiputera Sabah	915	120249	62.5	57.19	67.50	527	67544	35.1	30.54	39.95
Bumiputera Sarawak	26	3600	74.6	60.35	84.94	10	1228	25.4	15.06	39.65
Others	156	22732	68.7	56.93	78.42	73	9772	29.5	20.98	39.78
School level										
Primary school	536	94936	71.8	66.92	76.13	205	35619	26.9	22.90	31.36
Secondary school	1003	118897	59.8	53.61	65.76	625	73077	36.8	31.59	42.29
Class										
Standard 4	143	29326	66.1	58.52	73.03	68	14036	31.7	25.53	38.50
Standard 5	164	33558	76.7	65.38	85.14	51	9792	22.4	14.05	33.70
Standard 6	229	32052	72.5	67.30	77.15	86	11790	26.7	21.97	31.96
Form 1	205	23790	55.8	45.83	65.24	146	16637	39.0	30.38	48.35
Form 2	216	24469	60.3	49.44	70.22	130	15313	37.7	28.31	48.18
Form 3	205	24899	61.4	51.09	70.77	117	14190	35.0	26.99	43.94
Form 4	160	23952	62.6	52.14	71.97	89	12782	33.4	25.51	42.34
Form 5	217	21787	59.5	50.46	67.93	143	14156	38.7	30.77	47.19
School session										
Morning session	838	123124	65.9	60.48	70.86	430	58828	31.5	27.27	36.00
Evening session	251	29621	60.2	51.36	68.34	150	18294	37.2	29.70	45.27
Morning and evening session	449	60977	64.4	54.61	73.09	250	31574	33.3	25.29	42.49
BMI-for-age status (BAZ)										
Thinness (<-2sd)	93	13083	66.8	57.72	74.78	42	5769	29.5	21.87	38.39
Normal (≥-2sd - ≤+1sd)	1097	152189	65.8	60.50	70.67	564	73522	31.8	27.33	36.57
Overweight (>+1sd - ≤+2sd)	202	27702	59.2	51.53	66.46	139	18394	39.3	32.59	46.46
Obese (>+2sd)	143	20492	62.8	53.41	71.25	83	10807	33.1	26.13	40.90
Height-for-age status (HAZ)										
Stunting (<-2sd)	183	24803	62.9	54.34	70.69	103	12652	32.1	24.99	40.09
Normal (≥-2sd)	1352	188663	64.8	59.80	69.56	725	95841	32.9	28.82	37.33

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
Sabah	65	8475	2.6	1.79	3.65
Locality of school					
Urban	23	3278	2.1	1.43	3.10
Rural	42	5197	3.0	1.77	4.93
Sex					
Boys	37	4862	2.9	1.82	4.66
Girls	28	3613	2.2	1.23	3.89
Ethnicity					
Malay	14	1908	4.2	2.13	8.20
Chinese	10	1321	2.4	1.43	4.12
Indian					
Bumiputera Sabah	36	4647	2.4	1.68	3.47
Bumiputera Sarawak					
Others	5	600	1.8	0.55	5.80
School level					
Primary school	9	1752	1.3	0.76	2.29
Secondary school	56	6723	3.4	2.36	4.82
Class					
Standard 4	5	970	2.2	0.94	5.00
Standard 5	2	411	0.9	0.26	3.32
Standard 6	2	370	0.8	0.22	3.10
Form 1	20	2240	5.3	3.19	8.52
Form 2	7	802	2.0	0.92	4.17
Form 3	12	1464	3.6	1.45	8.71
Form 4	10	1540	4.0	1.75	8.99
Form 5	7	678	1.9	0.79	4.29
School session					
Morning session	39	4989	2.7	1.54	4.59
Evening session	10	1326	2.7	1.42	5.04
Morning and evening session	16	2160	2.3	1.11	4.63
BMI-for-age status (BAZ)					
Thinness (<-2sd)	6	733	3.7	1.65	8.25
Normal (≥-2sd - ≤+1sd)	43	5698	2.5	1.68	3.59
Overweight (>+1sd - ≤+2sd)	6	692	1.5	0.56	3.83
Obese (>+2sd)	10	1351	4.1	2.40	7.06
Height-for-age status (HAZ)					
Stunting (<-2sd)	14	1991	5.0	3.28	7.69
Normal (≥-2sd)	51	6484	2.2	1.48	3.34

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	
Sabah	499	76537	23.9	17.46	31.90	1579	209811	65.6	59.06	71.64
Locality of school										
Urban	320	50819	33.5	23.54	45.22	638	89908	59.3	49.00	68.83
Rural	179	25718	15.3	10.67	21.45	941	119903	71.3	65.15	76.79
Sex										
Boys	238	38785	24.4	16.74	34.03	779	102545	64.4	56.50	71.59
Girls	261	37752	23.5	17.70	30.54	800	107266	66.8	60.63	72.50
Ethnicity										
Malay	75	10850	25.3	18.30	33.90	215	28188	65.8	57.44	73.22
Chinese	143	25174	48.0	36.72	59.44	160	24510	46.7	34.95	58.84
Indian	4	403	33.2	9.35	70.61	6	699	57.6	27.61	82.85
Bumiputera Sabah	216	30771	16.5	11.61	23.00	1026	132721	71.3	65.62	76.39
Bumiputera Sarawak	6	876	18.2	7.39	38.14	27	3541	73.4	55.37	85.93
Others	55	8463	26.3	19.19	34.81	145	20152	62.5	53.24	70.98
School level										
Primary school	255	47680	36.9	27.49	47.34	430	73155	56.6	46.28	66.30
Secondary school	244	28857	15.2	10.29	21.77	1149	136656	71.8	65.93	76.98
Class										
Standard 4	95	19658	45.6	38.69	52.61	98	19924	46.2	38.02	54.55
Standard 5	72	15234	35.7	24.29	48.91	126	24760	58.0	45.46	69.52
Standard 6	88	12788	29.4	18.74	42.93	206	28471	65.5	52.25	76.65
Form 1	56	6356	15.9	11.48	21.55	242	28276	70.6	61.28	78.53
Form 2	55	6292	16.0	10.86	22.87	243	28009	71.1	64.06	77.26
Form 3	46	5718	14.7	8.38	24.43	239	28993	74.4	66.82	80.75
Form 4	33	5080	14.1	6.19	28.84	173	26078	72.1	51.52	86.32
Form 5	54	5411	15.1	7.11	29.23	252	25301	70.6	62.55	77.52
School session										
Morning session	297	46829	26.0	19.10	34.34	858	119334	66.3	57.97	73.66
Evening session	47	6126	12.9	7.58	21.17	283	33733	71.1	66.69	75.22
Morning and evening session	155	23582	25.6	15.17	39.84	437	56633	61.5	54.06	68.42
BMI-for-age status (BAZ)										
Thinness (<-2sd)	30	4456	24.0	15.93	34.41	85	11726	63.1	53.85	71.43
Normal (≥-2sd - ≤+1sd)	344	53141	23.7	17.36	31.58	1108	147368	65.8	59.83	71.39
Overweight (>+1sd - ≤+2sd)	80	11818	25.9	15.84	39.28	229	29855	65.4	54.08	75.13
Obese (>+2sd)	45	7122	22.9	13.93	35.31	152	20385	65.6	52.90	76.37
Height-for-age status (HAZ)										
Stunting (<-2sd)	51	7439	19.9	14.71	26.40	185	24072	64.5	57.91	70.49
Normal (≥-2sd)	448	69099	24.5	17.74	32.85	1389	185264	65.7	58.69	72.16

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
Sabah	52	7099	2.2	1.44	3.41	163	18282	5.7	2.69	11.74
Locality of school										
Urban	30	4309	2.8	1.58	5.06	28	3411	2.2	0.61	7.98
Rural	22	2789	1.7	0.99	2.76	135	14871	8.8	3.89	18.90
Sex										
Boys	33	4525	2.8	1.70	4.72	86	9835	6.2	3.05	12.10
Girls	19	2573	1.6	0.93	2.76	77	8447	5.3	2.31	11.56
Ethnicity										
Malay	12	1475	3.4	1.61	7.20	16	1805	4.2	1.76	9.73
Chinese	12	1891	3.6	1.48	8.53	5	605	1.2	0.19	6.63
Indian						1	111	9.2	1.36	42.57
Bumiputera Sabah	24	3283	1.8	1.07	2.88	133	14633	7.9	3.77	15.68
Bumiputera Sarawak	1	96	2.0	0.21	16.20					
Others	3	353	1.1	0.21	5.44	8	1128	3.5	1.80	6.70
School level										
Primary school	20	3286	2.5	1.16	5.48	6	973	0.8	0.31	1.82
Secondary school	32	3813	2.0	1.31	3.05	157	17308	9.1	4.43	17.75
Class										
Standard 4	9	1716	4.0	2.08	7.46	1	215	0.5	0.07	3.70
Standard 5	3	587	1.4	0.55	3.41	2	402	0.9	0.25	3.42
Standard 6	8	983	2.3	0.49	9.72	3	356	0.8	0.23	2.86
Form 1	18	2034	5.1	2.87	8.83	26	2805	7.0	3.21	14.62
Form 2	8	1065	2.7	1.10	6.52	28	3081	7.8	3.67	15.88
Form 3	3	377	1.0	0.32	2.88	30	3559	9.1	4.89	16.43
Form 4	1	154	0.4	0.05	3.61	32	3975	11.0	1.81	45.36
Form 5	2	182	0.5	0.12	2.07	41	3889	10.8	4.12	25.63
School session										
Morning session	27	4029	2.2	1.36	3.66	39	4760	2.6	1.43	4.84
Evening session	15	1911	4.0	2.02	7.89	47	5135	10.8	5.20	21.19
Morning and evening session	10	1159	1.3	0.47	3.31	77	8387	9.1	2.36	29.31
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	240	1.3	0.29	5.48	9	1190	6.4	2.81	13.92
Normal (≥-2sd - ≤+1sd)	37	5097	2.3	1.50	3.45	130	14404	6.4	2.98	13.36
Overweight (>+1sd - ≤+2sd)	3	401	0.9	0.28	2.73	15	1684	3.7	1.31	9.96
Obese (>+2sd)	10	1360	4.4	1.86	9.96	8	909	2.9	1.25	6.67
Height-for-age status (HAZ)										
Stunting (<-2sd)	5	676	1.8	0.77	4.18	37	4136	11.1	6.26	18.85
Normal (≥-2sd)	47	6422	2.3	1.43	3.62	125	14051	5.0	2.24	10.74

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
Sabah	56	8008	2.5	1.60	3.89
Locality of school					
Urban	21	3181	2.1	1.35	3.25
Rural	35	4826	2.9	1.47	5.54
Sex					
Boys	25	3544	2.2	1.37	3.60
Girls	31	4463	2.8	1.60	4.80
Ethnicity					
Malay	4	546	1.3	0.28	5.61
Chinese	2	293	0.6	0.14	2.16
Indian					
Bumiputera Sabah	32	4724	2.5	1.48	4.33
Bumiputera Sarawak	2	314	6.5	1.22	28.06
Others	16	2131	6.6	3.88	11.05
School level					
Primary school	23	4263	3.3	1.80	5.96
Secondary school	33	3745	2.0	1.07	3.59
Class					
Standard 4	7	1634	3.8	1.20	11.33
Standard 5	9	1738	4.1	1.90	8.48
Standard 6	7	891	2.0	0.85	4.87
Form 1	5	558	1.4	0.35	5.37
Form 2	9	945	2.4	1.16	4.87
Form 3	3	320	0.8	0.20	3.31
Form 4	6	862	2.4	1.20	4.69
Form 5	10	1060	3.0	1.03	8.20
School session					
Morning session	34	5153	2.9	1.79	4.54
Evening session	5	513	1.1	0.28	4.04
Morning and evening session	17	2342	2.5	1.43	4.48
BMI-for-age status (BAZ)					
Thinness (<-2sd)	7	978	5.3	1.50	16.81
Normal (≥-2sd - ≤+1sd)	29	3797	1.7	0.99	2.90
Overweight (>+1sd - ≤+2sd)	11	1925	4.2	2.15	8.10
Obese (>+2sd)	9	1307	4.2	1.95	8.85
Height-for-age status (HAZ)					
Stunting (<-2sd)	7	1026	2.7	0.86	8.44
Normal (≥-2sd)	49	6982	2.5	1.66	3.69

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	
Sabah	619	86375	26.2	23.02	29.59	1450	194757	59.0	53.77	64.05
Locality of school										
Urban	282	41282	26.7	22.17	31.67	616	88485	57.1	48.94	64.94
Rural	337	45093	25.7	21.48	30.53	834	106272	60.7	54.09	66.89
Sex										
Boys	313	42597	25.7	22.50	29.18	742	100053	60.4	54.45	65.98
Girls	306	43778	26.6	22.28	31.52	708	94704	57.6	52.13	62.98
Ethnicity										
Malay	93	12824	28.5	23.72	33.83	212	27899	62.0	56.26	67.44
Chinese	92	14751	27.3	20.94	34.64	151	23754	43.9	36.91	51.13
Indian	1	111	9.1	1.02	49.46	8	920	75.9	40.36	93.59
Bumiputera Sabah	353	47290	24.6	21.14	28.49	923	120528	62.8	57.85	67.45
Bumiputera Sarawak	13	1850	38.3	18.42	63.10	20	2655	55.0	34.43	73.99
Others	67	9548	29.0	22.38	36.72	136	19001	57.8	46.18	68.54
School level										
Primary school	234	40635	30.9	26.01	36.31	408	70285	53.5	44.82	61.94
Secondary school	385	45740	23.0	20.13	26.21	1042	124472	62.7	57.21	67.82
Class										
Standard 4	68	13639	31.3	26.53	36.53	126	25429	58.4	50.35	65.99
Standard 5	70	13579	31.0	22.02	41.75	111	22138	50.6	39.51	61.61
Standard 6	96	13418	30.4	24.12	37.56	171	22718	51.5	38.18	64.63
Form 1	100	11652	27.3	21.39	34.21	235	26843	63.0	54.30	70.87
Form 2	92	10768	26.5	21.01	32.91	216	24998	61.6	55.66	67.20
Form 3	79	9667	23.8	19.25	29.13	213	25835	63.7	57.38	69.60
Form 4	51	7193	18.9	14.99	23.45	164	25032	65.6	51.91	77.15
Form 5	63	6460	17.6	12.67	23.90	214	21765	59.3	48.43	69.30
School session										
Morning session	341	50046	26.9	22.71	31.52	813	114321	61.4	55.89	66.68
Evening session	106	13011	26.5	20.33	33.83	261	31145	63.5	60.18	66.73
Morning and evening session	172	23318	24.6	20.92	28.69	376	49291	52.0	43.02	60.86
BMI-for-age status (BAZ)										
Thinness (<-2sd)	51	6978	35.6	23.70	49.66	77	10837	55.3	42.76	67.26
Normal (≥-2sd - ≤+1sd)	452	62685	27.2	24.06	30.53	1015	135688	58.8	53.49	63.97
Overweight (>+1sd - ≤+2sd)	64	9298	20.0	15.54	25.25	213	28836	61.9	55.54	67.86
Obese (>+2sd)	51	7331	22.5	17.13	28.85	143	19206	58.8	49.81	67.28
Height-for-age status (HAZ)										
Stunting (<-2sd)	75	10231	25.9	19.36	33.81	187	24501	62.1	55.84	68.01
Normal (≥-2sd)	543	76061	26.2	23.23	29.46	1261	170067	58.6	53.08	63.99

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	
Sabah	360	48911	14.8	10.29	20.87
Locality of school					
Urban	164	25120	16.2	9.30	26.76
Rural	196	23792	13.6	8.47	21.08
Sex					
Boys	157	23111	13.9	8.60	21.81
Girls	203	25800	15.7	11.29	21.43
Ethnicity					
Malay	34	4270	9.5	6.43	13.79
Chinese	92	15612	28.8	18.51	41.98
Indian	2	182	15.0	3.04	49.81
Bumiputera Sabah	199	24178	12.6	8.21	18.83
Bumiputera Sarawak	3	323	6.7	1.98	20.23
Others	30	4347	13.2	7.79	21.53
School level					
Primary school	103	20497	15.6	8.38	27.19
Secondary school	257	28414	14.3	9.15	21.68
Class					
Standard 4	18	4487	10.3	4.42	22.21
Standard 5	36	8044	18.4	10.63	29.89
Standard 6	49	7967	18.1	9.13	32.60
Form 1	36	4138	9.7	5.95	15.44
Form 2	45	4818	11.9	6.96	19.52
Form 3	42	5051	12.5	7.97	18.94
Form 4	43	5917	15.5	8.13	27.58
Form 5	91	8490	23.1	11.92	40.07
School session					
Morning session	148	21747	11.7	8.63	15.64
Evening session	43	4878	9.9	6.47	14.99
Morning and evening session	168	22176	23.4	14.61	35.28
BMI-for-age status (BAZ)					
Thinness (<-2sd)	13	1770	9.0	3.98	19.24
Normal (≥-2sd - ≤+1sd)	233	32272	14.0	9.58	19.98
Overweight (>+1sd - ≤+2sd)	69	8459	18.2	12.99	24.79
Obese (>+2sd)	42	6113	18.7	10.68	30.74
Height-for-age status (HAZ)					
Stunting (<-2sd)	38	4713	11.9	6.92	19.86
Normal (≥-2sd)	319	43900	15.1	10.52	21.29

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	
Sabah	1259	175193	63.3	58.26	68.11	357	48599	17.6	15.05	20.41
Locality of school										
Urban	566	82775	64.9	60.00	69.55	157	22199	17.4	13.22	22.58
Rural	693	92418	62.0	53.53	69.74	200	26401	17.7	14.92	20.88
Sex										
Boys	613	85225	61.2	55.78	66.33	207	27566	19.8	16.34	23.76
Girls	646	89968	65.5	60.05	70.57	150	21033	15.3	12.58	18.51
Ethnicity										
Malay	206	27933	69.2	63.60	74.23	50	6757	16.7	13.11	21.12
Chinese	134	22004	58.8	52.37	64.98	36	5168	13.8	7.01	25.42
Indian	4	469	45.5	17.81	76.30	3	361	35.0	10.36	71.49
Bumiputera Sabah	759	103039	62.3	55.34	68.71	232	30853	18.6	15.72	21.96
Bumiputera Sarawak	18	2378	56.8	39.72	72.43	7	1072	25.6	10.53	50.21
Others	138	19370	68.9	61.02	75.77	29	4389	15.6	10.49	22.58
School level										
Primary school	423	72838	67.1	62.90	71.03	124	20571	18.9	14.87	23.82
Secondary school	836	102355	60.9	53.26	68.03	233	28029	16.7	13.73	20.10
Class										
Standard 4	122	24239	63.0	55.72	69.79	39	7599	19.8	14.92	25.69
Standard 5	126	24688	71.9	67.65	75.77	32	6131	17.9	13.76	22.85
Standard 6	175	23911	66.8	60.43	72.69	53	6840	19.1	12.94	27.33
Form 1	180	21160	56.1	48.58	63.27	72	8459	22.4	15.01	32.08
Form 2	169	19636	55.4	46.15	64.29	66	8087	22.8	16.37	30.87
Form 3	181	22526	63.7	50.09	75.36	46	5451	15.4	10.07	22.85
Form 4	139	21598	68.2	48.20	83.21	23	3469	11.0	7.47	15.79
Form 5	167	17435	62.6	44.10	78.05	26	2563	9.2	3.93	20.08
School session										
Morning session	787	113257	70.1	65.67	74.17	173	25481	15.8	12.41	19.84
Evening session	181	22047	50.2	43.43	56.94	95	11890	27.1	19.06	36.91
Morning and evening session	291	39889	56.1	43.76	67.69	89	11229	15.8	11.56	21.18
BMI-for-age status (BAZ)										
Thinness (<-2sd)	79	11070	62.8	54.48	70.38	21	2863	16.2	10.55	24.15
Normal (≥-2sd - ≤+1sd)	889	123683	62.8	57.23	68.10	253	34064	17.3	14.45	20.58
Overweight (>+1sd - ≤+2sd)	182	25353	68.6	61.92	74.65	45	6468	17.5	13.08	23.05
Obese (>+2sd)	109	15086	60.3	53.83	66.39	36	5027	20.1	14.97	26.40
Height-for-age status (HAZ)										
Stunting (<-2sd)	138	18882	54.7	48.27	61.02	49	6973	20.2	15.49	25.93
Normal (≥-2sd)	1121	156311	64.6	59.65	69.26	306	41448	17.1	14.79	19.76

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	
Sabah	115	15493	5.6	3.94	7.90	233	26189	9.5	5.30	16.34
Locality of school										
Urban	77	10530	8.3	5.40	12.43	45	5226	4.1	1.06	14.51
Rural	38	4962	3.3	2.38	4.64	188	20963	14.1	7.77	24.09
Sex										
Boys	61	7844	5.6	3.88	8.12	113	12662	9.1	4.96	16.09
Girls	54	7649	5.6	3.46	8.85	120	13527	9.8	5.52	16.96
Ethnicity										
Malay	13	1707	4.2	2.62	6.76	21	2413	6.0	3.16	11.01
Chinese	44	6042	16.2	11.54	22.15	5	628	1.7	0.41	6.54
Indian	1	90	8.7	1.16	43.62	1	111	10.8	1.66	46.57
Bumiputera Sabah	49	6674	4.0	2.96	5.48	193	21524	13.0	7.44	21.76
Bumiputera Sarawak	2	228	5.5	1.42	18.76	2	227	5.4	1.08	23.22
Others	6	752	2.7	1.23	5.74	11	1285	4.6	1.82	11.00
School level										
Primary school	50	8184	7.5	5.04	11.14	6	1027	0.9	0.37	2.40
Secondary school	65	7308	4.3	2.55	7.32	227	25161	15.0	8.97	23.94
Class										
Standard 4	15	3237	8.4	5.58	12.50	4	767	2.0	0.68	5.68
Standard 5	5	978	2.8	1.16	6.81					
Standard 6	30	3969	11.1	5.91	19.88	2	260	0.7	0.18	2.82
Form 1	22	2298	6.1	2.64	13.42	44	4778	12.7	7.14	21.46
Form 2	12	1304	3.7	1.60	8.25	49	5422	15.3	8.75	25.37
Form 3	7	790	2.2	0.96	5.10	48	5508	15.6	8.80	26.06
Form 4	9	1444	4.6	2.44	8.39	34	4342	13.7	3.35	42.20
Form 5	15	1471	5.3	2.69	10.13	52	5111	18.4	9.45	32.64
School session										
Morning session	59	8285	5.1	3.58	7.30	74	8546	5.3	2.81	9.75
Evening session	16	2054	4.7	2.37	9.01	69	7449	17.0	7.31	34.59
Morning and evening session	40	5153	7.2	3.98	12.83	90	10194	14.3	5.65	31.86
BMI-for-age status (BAZ)										
Thinness (<-2sd)	9	1265	7.2	3.88	12.90	10	1315	7.5	3.32	15.91
Normal (≥-2sd - ≤+1sd)	85	11431	5.8	3.94	8.49	183	20480	10.4	5.75	18.09
Overweight (>+1sd - ≤+2sd)	9	1160	3.1	1.54	6.30	22	2395	6.5	3.10	13.06
Obese (>+2sd)	12	1637	6.5	2.94	13.90	18	1999	8.0	4.10	14.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	13	1711	5.0	2.40	9.97	49	5373	15.6	9.32	24.86
Normal (≥-2sd)	102	13782	5.7	3.82	8.42	184	20816	8.6	4.69	15.26

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
Sabah	73	11168	4.0	2.48	6.50
Locality of school					
Urban	37	6771	5.3	2.49	10.95
Rural	36	4397	2.9	2.03	4.27
Sex					
Boys	38	5991	4.3	2.44	7.48
Girls	35	5177	3.8	2.35	5.99
Ethnicity					
Malay	12	1574	3.9	2.38	6.33
Chinese	17	3568	9.5	3.73	22.28
Indian					
Bumiputera Sabah	26	3418	2.1	1.26	3.36
Bumiputera Sarawak	2	279	6.7	1.21	29.42
Others	16	2329	8.3	4.93	13.59
School level					
Primary school	26	5946	5.5	2.35	12.22
Secondary school	47	5222	3.1	2.14	4.48
Class					
Standard 4	11	2611	6.8	2.42	17.66
Standard 5	11	2546	7.4	2.98	17.25
Standard 6	4	789	2.2	0.57	8.08
Form 1	10	1050	2.8	1.04	7.20
Form 2	9	998	2.8	1.63	4.80
Form 3	9	1105	3.1	1.27	7.50
Form 4	6	804	2.5	1.05	6.00
Form 5	13	1265	4.5	2.33	8.65
School session					
Morning session	43	6007	3.7	2.51	5.47
Evening session	4	489	1.1	0.42	2.95
Morning and evening session	26	4671	6.6	2.60	15.61
BMI-for-age status (BAZ)					
Thinness (<-2sd)	7	1121	6.4	2.53	15.05
Normal ($\geq -2sd - \leq +1sd$)	46	7204	3.7	2.01	6.58
Overweight ($> +1sd - \leq +2sd$)	11	1563	4.2	2.11	8.32
Obese ($> +2sd$)	9	1279	5.1	2.38	10.65
Height-for-age status (HAZ)					
Stunting (<-2sd)	11	1566	4.5	1.98	10.09
Normal ($\geq -2sd$)	62	9602	4.0	2.46	6.34

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	
Sabah	202	27850	8.4	7.03	10.11	1694	227365	68.9	63.20	74.16
Locality of school										
Urban	91	13107	8.5	6.46	10.98	700	99844	64.4	53.45	73.98
Rural	111	14743	8.4	6.57	10.79	994	127521	73.0	69.90	75.89
Sex										
Boys	112	15375	9.3	7.39	11.60	870	117172	70.8	64.62	76.22
Girls	90	12475	7.6	5.92	9.70	824	110193	67.1	60.78	72.88
Ethnicity										
Malay	31	4143	9.2	6.07	13.78	254	33644	74.9	69.44	79.66
Chinese	22	3597	6.6	3.11	13.60	186	27703	51.1	33.96	67.99
Indian						9	956	78.8	38.54	95.65
Bumiputera Sabah	118	15784	8.2	6.67	10.11	1060	138280	72.1	68.77	75.20
Bumiputera Sarawak	3	359	7.6	2.04	24.55	26	3577	75.8	63.23	85.11
Others	28	3967	12.0	8.58	16.65	159	23205	70.4	62.93	76.98
School level										
Primary school	70	12024	9.1	6.75	12.26	504	86418	65.7	52.79	76.62
Secondary school	132	15827	8.0	6.41	9.90	1190	140947	71.1	67.10	74.80
Class										
Standard 4	26	5042	11.5	7.37	17.46	142	28056	63.9	49.49	76.19
Standard 5	20	3761	8.6	4.68	15.38	158	30710	70.5	55.19	82.27
Standard 6	24	3221	7.3	4.18	12.45	204	27652	62.7	52.91	71.54
Form 1	23	2732	6.4	3.72	10.86	280	31825	74.8	66.94	81.32
Form 2	35	4140	10.2	6.72	15.28	241	27992	69.2	61.79	75.75
Form 3	29	3648	9.0	5.89	13.51	233	28394	70.0	64.43	75.07
Form 4	16	2390	6.3	4.15	9.44	192	28261	74.4	67.66	80.18
Form 5	29	2916	7.9	5.33	11.68	244	24475	66.7	55.79	76.01
School session										
Morning session	117	16980	9.1	7.53	11.01	933	133556	71.8	68.24	75.02
Evening session	29	3901	7.9	4.07	14.95	295	35207	71.7	66.22	76.61
Morning and evening session	56	6969	7.4	5.22	10.34	466	58601	62.0	48.37	74.04
BMI-for-age status (BAZ)										
Thinness (<-2sd)	10	1470	7.6	4.19	13.57	95	13026	67.8	57.10	76.92
Normal (≥-2sd - ≤+1sd)	145	19977	8.7	7.03	10.63	1187	158150	68.6	61.62	74.81
Overweight (>+1sd - ≤+2sd)	31	4217	9.0	5.86	13.61	242	32751	70.0	63.97	75.41
Obese (>+2sd)	16	2186	6.7	4.12	10.70	165	22961	70.3	63.76	76.14
Height-for-age status (HAZ)										
Stunting (<-2sd)	27	3590	9.1	6.31	12.97	214	27654	70.1	63.28	76.14
Normal (≥-2sd)	175	24260	8.4	6.75	10.35	1475	199235	68.8	62.84	74.11

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	
Sabah	531	74580	22.6	17.02	29.40
Locality of school					
Urban	271	42148	27.2	16.99	40.49
Rural	260	32432	18.6	15.31	22.33
Sex					
Boys	229	33051	20.0	13.88	27.84
Girls	302	41529	25.3	19.50	32.12
Ethnicity					
Malay	53	7135	15.9	12.51	19.96
Chinese	127	22908	42.3	23.12	64.04
Indian	2	257	21.2	4.35	61.46
Bumiputera Sabah	297	37726	19.7	16.48	23.31
Bumiputera Sarawak	6	782	16.6	9.43	27.47
Others	46	5771	17.5	12.02	24.82
School level					
Primary school	172	33120	25.2	13.91	41.21
Secondary school	359	41460	20.9	16.82	25.69
Class					
Standard 4	46	10805	24.6	12.07	43.70
Standard 5	38	9085	20.9	9.43	40.03
Standard 6	88	13230	30.0	21.00	40.86
Form 1	67	7987	18.8	13.43	25.61
Form 2	76	8313	20.6	13.52	29.97
Form 3	72	8511	21.0	15.70	27.48
Form 4	49	7325	19.3	13.30	27.12
Form 5	95	9324	25.4	16.64	36.73
School session					
Morning session	252	35594	19.1	16.16	22.49
Evening session	86	9994	20.4	13.97	28.68
Morning and evening session	192	28881	30.6	18.07	46.79
BMI-for-age status (BAZ)					
Thinness (<-2sd)	34	4714	24.5	16.47	34.92
Normal ($\geq -2sd - \leq +1sd$)	367	52449	22.7	16.26	30.86
Overweight ($> +1sd - \leq +2sd$)	74	9819	21.0	15.75	27.40
Obese ($> +2sd$)	55	7503	23.0	16.06	31.76
Height-for-age status (HAZ)					
Stunting (<-2sd)	59	8201	20.8	14.79	28.42
Normal ($\geq -2sd$)	471	66284	22.9	17.05	29.96

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	
Sabah	1066	145281	58.3	55.12	61.47	476	65851	26.4	23.34	29.78
Locality of school										
Urban	455	65210	59.4	55.90	62.87	223	32230	29.4	24.88	34.31
Rural	611	80070	57.5	52.44	62.32	253	33621	24.1	20.59	28.06
Sex										
Boys	514	71145	55.3	51.23	59.27	286	38466	29.9	26.20	33.86
Girls	552	74135	61.6	57.26	65.73	190	27385	22.7	18.34	27.85
Ethnicity										
Malay	174	23166	62.9	56.01	69.24	72	9708	26.3	20.39	33.31
Chinese	123	18298	60.5	51.63	68.68	62	9581	31.7	25.06	39.10
Indian	4	380	39.7	10.51	78.70	4	465	48.6	19.98	78.21
Bumiputera Sabah	652	86344	57.3	52.25	62.15	268	36527	24.2	20.78	28.04
Bumiputera Sarawak	15	2111	56.5	38.04	73.37	11	1429	38.3	20.37	60.07
Others	98	14983	56.5	48.63	64.06	59	8141	30.7	25.67	36.24
School level										
Primary school	330	57400	60.0	56.22	63.72	179	29834	31.2	26.88	35.88
Secondary school	736	87881	57.3	52.73	61.68	297	36017	23.5	20.29	26.98
Class										
Standard 4	98	19350	60.6	57.29	63.77	44	8487	26.6	21.10	32.87
Standard 5	107	20721	61.8	53.41	69.51	54	10495	31.3	24.67	38.79
Standard 6	125	17328	57.5	48.01	66.44	81	10851	36.0	27.32	45.70
Form 1	165	19129	56.9	50.90	62.79	77	8567	25.5	20.58	31.14
Form 2	171	19950	64.2	57.53	70.32	54	6364	20.5	14.68	27.81
Form 3	139	17119	54.6	49.18	59.97	66	8147	26.0	19.64	33.55
Form 4	110	16386	54.4	44.88	63.52	52	7975	26.5	17.97	37.12
Form 5	151	15297	56.0	45.19	66.34	48	4965	18.2	11.52	27.52
School session										
Morning session	616	88892	60.6	57.99	63.18	278	40264	27.5	24.48	30.65
Evening session	174	21269	56.3	48.25	63.97	76	9207	24.4	21.26	27.74
Morning and evening session	276	35121	54.3	46.27	62.17	122	16381	25.3	18.30	33.96
BMI-for-age status (BAZ)										
Thinness (<-2sd)	56	7663	54.8	44.64	64.51	29	4031	28.8	20.64	38.64
Normal ($\geq -2sd - \leq +1sd$)	756	101760	58.4	55.11	61.67	328	45763	26.3	22.53	30.41
Overweight ($> +1sd - \leq +2sd$)	157	22141	60.9	53.05	68.19	63	8237	22.6	18.50	27.41
Obese ($> +2sd$)	96	13633	56.1	50.57	61.54	56	7820	32.2	26.27	38.76
Height-for-age status (HAZ)										
Stunting (<-2sd)	125	16267	53.0	45.90	60.03	62	8634	28.1	22.31	34.82
Normal ($\geq -2sd$)	940	128930	59.1	55.62	62.50	414	57218	26.2	23.01	29.73

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	
Sabah	158	18044	7.2	4.36	11.80	151	19905	8.0	6.47	9.84
Locality of school										
Urban	40	4951	4.5	1.98	9.94	50	7329	6.7	5.01	8.85
Rural	118	13093	9.4	5.15	16.52	101	12576	9.0	6.89	11.74
Sex										
Boys	85	9701	7.5	4.42	12.57	68	9379	7.3	5.51	9.59
Girls	73	8343	6.9	4.09	11.52	83	10525	8.7	6.79	11.19
Ethnicity										
Malay	15	1704	4.6	2.13	9.75	16	2272	6.2	3.78	9.91
Chinese	6	728	2.4	0.80	6.98	10	1651	5.5	3.54	8.32
Indian	1	111	11.7	1.85	47.99					
Bumiputera Sabah	130	14797	9.8	5.99	15.68	104	13100	8.7	6.63	11.31
Bumiputera Sarawak						2	193	5.2	1.21	19.56
Others	6	704	2.7	0.93	7.37	19	2689	10.1	7.20	14.09
School level										
Primary school	8	1363	1.4	0.69	2.93	40	7026	7.3	5.54	9.68
Secondary school	150	16681	10.9	6.95	16.60	111	12879	8.4	6.31	11.07
Class										
Standard 4	5	910	2.8	1.34	5.97	15	3194	10.0	5.59	17.25
Standard 5	1	208	0.6	0.09	4.11	11	2112	6.3	3.67	10.59
Standard 6	2	245	0.8	0.10	6.02	14	1719	5.7	3.09	10.30
Form 1	30	3249	9.7	6.26	14.66	22	2647	7.9	5.54	11.08
Form 2	29	3321	10.7	6.38	17.36	13	1450	4.7	2.59	8.25
Form 3	30	3420	10.9	5.95	19.18	21	2651	8.5	5.81	12.16
Form 4	25	3207	10.6	3.06	30.99	18	2580	8.6	6.26	11.60
Form 5	36	3484	12.8	7.09	21.91	37	3550	13.0	7.29	22.13
School session										
Morning session	56	6799	4.6	2.99	7.13	73	10686	7.3	5.90	8.96
Evening session	39	4248	11.2	5.10	22.99	25	3077	8.1	5.43	12.04
Morning and evening session	63	6998	10.8	4.60	23.41	53	6141	9.5	5.46	16.01
BMI-for-age status (BAZ)										
Thinness (<-2sd)	8	1022	7.3	3.43	14.87	8	1277	9.1	5.10	15.81
Normal (≥-2sd - ≤+1sd)	116	13118	7.5	4.44	12.51	103	13517	7.8	6.06	9.89
Overweight (>+1sd - ≤+2sd)	20	2297	6.3	3.29	11.80	29	3692	10.2	6.63	15.23
Obese (>+2sd)	13	1512	6.2	3.57	10.65	10	1325	5.5	2.54	11.31
Height-for-age status (HAZ)										
Stunting (<-2sd)	36	4119	13.4	9.18	19.21	14	1658	5.4	2.45	11.50
Normal (≥-2sd)	121	13831	6.3	3.55	11.08	136	18152	8.3	6.89	10.01

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	
Sabah	98	14181	0.0	0.03	0.06	2025	273752	0.8	0.80	0.86
Locality of school										
Urban	40	5803	3.8	2.39	5.85	880	127537	82.6	75.84	87.74
Rural	58	8378	4.8	3.36	6.76	1145	146215	83.5	80.23	86.25
Sex										
Boys	63	9268	5.6	4.13	7.51	1001	135717	81.8	77.88	85.19
Girls	35	4912	3.0	2.10	4.26	1024	138035	84.3	80.50	87.45
Ethnicity										
Malay	13	1856	4.1	2.31	7.31	293	38561	86.0	81.40	89.57
Chinese	10	1531	2.9	0.94	8.32	240	38756	72.2	64.47	78.87
Indian						10	1119	92.2	54.92	99.14
Bumiputera Sabah	58	8233	4.3	2.92	6.25	1249	162638	84.7	81.87	87.09
Bumiputera Sarawak	2	327	6.8	1.29	28.66	30	3970	82.2	66.90	91.36
Others	15	2234	6.8	4.75	9.57	203	28708	87.0	82.80	90.32
School level										
Primary school	38	6842	5.2	3.38	7.89	613	106237	80.6	74.14	85.83
Secondary school	60	7338	3.7	2.63	5.20	1412	167515	84.6	81.05	87.66
Class										
Standard 4	12	2396	5.4	2.61	10.94	174	35343	80.0	74.10	84.88
Standard 5	16	3233	7.5	4.93	11.12	173	34139	78.7	68.72	86.19
Standard 6	10	1214	2.7	1.32	5.64	266	36755	83.1	72.69	90.12
Form 1	14	1613	3.8	2.31	6.22	313	35997	85.1	76.83	90.73
Form 2	13	1572	3.9	2.29	6.55	307	35538	88.1	80.85	92.86
Form 3	17	2124	5.3	2.73	9.86	263	31889	78.8	73.60	83.26
Form 4	8	1168	3.1	1.14	7.92	227	33791	88.3	83.11	92.03
Form 5	8	861	2.4	0.82	6.60	302	30301	82.9	76.38	87.97
School session										
Morning session	60	9107	4.9	3.66	6.51	1097	156018	83.8	80.53	86.62
Evening session	17	2165	4.4	2.68	7.23	344	41513	85.0	77.17	90.44
Morning and evening session	21	2909	3.1	1.64	5.71	583	76110	80.5	74.77	85.25
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	1580	8.1	4.49	14.21	118	16397	84.1	74.29	90.70
Normal (≥-2sd - ≤+1sd)	65	9341	4.1	2.90	5.63	1424	192236	83.4	79.62	86.56
Overweight (>+1sd - ≤+2sd)	16	2307	4.9	2.23	10.58	287	38505	82.5	76.72	87.07
Obese (>+2sd)	6	953	2.9	1.15	7.36	192	26233	81.1	73.76	86.79
Height-for-age status (HAZ)										
Stunting (<-2sd)	14	2117	5.4	3.17	9.07	244	31918	81.5	74.86	86.72
Normal (≥-2sd)	84	12064	4.2	3.10	5.56	1777	241452	83.3	79.77	86.29

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				
	Count	Estimated Population	Prevalence (%)	Did not ate fast food	
				Lower	Upper
Sabah	301	41708	0.1	0.10	0.17
Locality of school					
Urban	138	21107	13.7	8.32	21.64
Rural	163	20601	11.8	8.90	15.38
Sex					
Boys	148	20887	12.6	9.06	17.24
Girls	153	20822	12.7	9.45	16.90
Ethnicity					
Malay	32	4433	9.9	7.04	13.71
Chinese	81	13363	24.9	16.35	36.02
Indian	1	95	7.8	0.86	45.08
Bumiputera Sabah	168	21234	11.1	8.82	13.77
Bumiputera Sarawak	4	532	11.0	5.10	22.21
Others	15	2050	6.2	3.31	11.36
School level					
Primary school	96	18652	14.2	8.45	22.76
Secondary school	205	23056	11.6	8.64	15.54
Class					
Standard 4	29	6422	14.5	9.79	21.06
Standard 5	26	5985	13.8	7.04	25.30
Standard 6	41	6245	14.1	6.97	26.52
Form 1	41	4707	11.1	6.32	18.83
Form 2	31	3225	8.0	3.59	16.85
Form 3	53	6440	15.9	12.56	19.96
Form 4	24	3315	8.7	5.26	13.94
Form 5	56	5370	14.7	9.44	22.17
School session					
Morning session	144	21049	11.3	8.83	14.37
Evening session	47	5179	10.6	5.19	20.45
Morning and evening session	110	15481	16.4	10.95	23.79
BMI-for-age status (BAZ)					
Thinness (<-2sd)	11	1509	7.7	3.51	16.22
Normal ($\geq-2sd - \leq+1sd$)	209	28992	12.6	9.20	16.96
Overweight ($>+1sd - \leq+2sd$)	43	5865	12.6	9.45	16.51
Obese ($>+2sd$)	36	5152	15.9	10.34	23.75
Height-for-age status (HAZ)					
Stunting (<-2sd)	39	5122	13.1	8.43	19.75
Normal ($\geq-2sd$)	260	36397	12.6	9.42	16.54

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	
Sabah	279	42026	12.7	9.35	17.08	1117	160196	48.5	42.25	54.77
Locality of school										
Urban	181	27925	18.0	13.10	24.22	543	83167	53.6	45.59	61.45
Rural	98	14101	8.0	5.26	12.12	574	77029	43.9	35.61	52.64
Sex										
Boys	160	24809	14.9	10.79	20.31	492	72061	43.4	37.21	49.77
Girls	119	17217	10.5	7.67	14.16	625	88135	53.6	46.24	60.89
Ethnicity										
Malay	45	6133	13.6	9.24	19.50	161	22543	49.9	38.59	61.18
Chinese	69	12551	23.3	18.01	29.51	197	32473	60.2	56.68	63.61
Indian	2	201	16.5	3.82	49.69	6	719	59.3	27.93	84.53
Bumiputera Sabah	136	19051	9.9	6.58	14.66	614	83890	43.6	37.33	50.12
Bumiputera Sarawak	2	318	6.6	1.14	30.17	18	2535	52.5	35.27	69.17
Others	25	3772	11.5	7.98	16.21	121	18037	54.8	45.01	64.29
School level										
Primary school	128	24240	18.4	13.63	24.32	461	82057	62.2	58.83	65.47
Secondary school	151	17786	9.0	5.73	13.74	656	78140	39.4	33.92	45.09
Class										
Standard 4	47	9671	21.9	18.17	26.15	141	28997	65.7	60.61	70.38
Standard 5	33	7524	17.2	9.37	29.43	135	26854	61.4	52.85	69.24
Standard 6	48	7045	16.0	10.56	23.54	185	26207	59.6	54.17	64.76
Form 1	32	3579	8.4	5.53	12.70	142	16675	39.4	31.94	47.31
Form 2	37	4110	10.1	5.67	17.43	143	16432	40.5	33.21	48.22
Form 3	29	3678	9.1	4.59	17.12	130	15492	38.2	30.68	46.34
Form 4	22	3398	8.9	3.85	19.15	104	15610	40.8	33.74	48.23
Form 5	31	3021	8.2	4.07	15.94	137	13929	37.9	25.35	52.39
School session										
Morning session	161	25357	13.6	10.76	17.03	621	92607	49.6	42.76	56.53
Evening session	30	3705	7.6	3.66	14.94	166	20253	41.3	31.76	51.53
Morning and evening session	88	12964	13.7	7.61	23.41	329	47225	49.9	38.52	61.25
BMI-for-age status (BAZ)										
Thinness (<-2sd)	19	2899	14.8	10.53	20.41	80	11074	56.5	47.47	65.19
Normal (≥-2sd - ≤+1sd)	181	27375	11.9	8.48	16.32	762	110281	47.7	40.93	54.64
Overweight (>+1sd - ≤+2sd)	45	6333	13.5	9.17	19.53	163	22607	48.3	41.36	55.34
Obese (>+2sd)	33	5336	16.4	10.08	25.63	111	16125	49.6	42.15	57.16
Height-for-age status (HAZ)										
Stunting (<-2sd)	25	3801	9.7	6.38	14.37	146	19624	49.9	40.86	58.91
Normal (≥-2sd)	253	38142	13.1	9.56	17.77	970	140463	48.4	41.82	54.95

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
Sabah	1033	128178	38.8	30.02	48.36
Locality of school					
Urban	338	44036	28.4	17.82	42.02
Rural	695	84142	48.0	37.32	58.88
Sex					
Boys	560	69230	41.7	32.22	51.79
Girls	473	58949	35.9	27.23	45.56
Ethnicity					
Malay	134	16523	36.6	25.76	48.90
Chinese	67	8921	16.5	9.53	27.16
Indian	3	293	24.2	6.43	59.73
Bumiputera Sabah	727	89379	46.5	37.65	55.53
Bumiputera Sarawak	16	1975	40.9	19.14	66.94
Others	86	11087	33.7	22.70	46.81
School level					
Primary school	158	25612	19.4	13.07	27.86
Secondary school	875	102567	51.7	43.57	59.69
Class					
Standard 4	27	5493	12.4	9.50	16.12
Standard 5	49	9384	21.4	12.05	35.23
Standard 6	82	10735	24.4	15.85	35.62
Form 1	194	22113	52.2	42.80	61.44
Form 2	173	20041	49.4	39.51	59.30
Form 3	175	21383	52.7	40.63	64.52
Form 4	133	19265	50.3	38.68	61.95
Form 5	200	19764	53.8	36.42	70.36
School session					
Morning session	522	68604	36.8	27.96	46.56
Evening session	213	25088	51.2	37.73	64.41
Morning and evening session	298	34486	36.4	21.33	54.76
BMI-for-age status (BAZ)					
Thinness (<-2sd)	42	5613	28.7	19.33	40.24
Normal (\geq -2sd - \leq +1sd)	757	93322	40.4	31.27	50.25
Overweight ($>$ +1sd - \leq +2sd)	139	17848	38.1	28.40	48.95
Obese ($>$ +2sd)	91	11018	33.9	23.56	46.10
Height-for-age status (HAZ)					
Stunting (<-2sd)	128	15916	40.5	31.62	49.96
Normal (\geq -2sd)	901	111884	38.5	29.37	48.56

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	
Sabah	595	80849	41.6	33.11	50.62	190	27914	14.4	11.35	18.01
Locality of school										
Urban	276	38549	36.0	23.57	50.55	123	18965	17.7	13.87	22.30
Rural	319	42300	48.5	43.24	53.89	67	8949	10.3	7.49	13.92
Sex										
Boys	254	35093	37.8	29.02	47.55	99	15296	16.5	12.46	21.51
Girls	341	45756	45.0	36.24	54.16	91	12618	12.4	9.68	15.80
Ethnicity										
Malay	107	14152	51.2	40.66	61.61	29	4270	15.4	8.79	25.71
Chinese	42	6367	14.5	8.51	23.56	58	9407	21.4	14.44	30.50
Indian	4	517	63.9	21.18	92.12	1	90	11.1	1.59	48.99
Bumiputera Sabah	365	48978	49.9	44.72	55.08	80	11032	11.2	8.45	14.80
Bumiputera Sarawak	11	1571	67.6	45.24	84.03	2	313	13.5	3.22	42.14
Others	66	9263	43.2	33.46	53.58	20	2802	13.1	8.48	19.65
School level										
Primary school	204	33873	32.8	22.14	45.60	90	16252	15.7	11.14	21.76
Secondary school	391	46976	51.6	44.21	58.88	100	11661	12.8	9.84	16.50
Class										
Standard 4	48	9280	24.6	13.70	40.10	27	5737	15.2	11.29	20.16
Standard 5	62	12309	37.2	27.28	48.35	28	5902	17.8	10.22	29.29
Standard 6	94	12284	37.9	21.88	57.02	35	4613	14.2	9.31	21.12
Form 1	81	9632	52.5	42.86	61.95	13	1573	8.6	4.54	15.61
Form 2	81	9329	48.3	40.11	56.54	21	2326	12.0	7.88	17.97
Form 3	83	10137	54.4	42.21	66.08	24	2856	15.3	9.32	24.15
Form 4	58	8816	48.0	37.25	58.94	12	1942	10.6	6.20	17.47
Form 5	88	9062	55.2	41.30	68.41	30	2964	18.1	10.81	28.63
School session										
Morning session	339	48412	42.7	34.58	51.32	119	18081	16.0	12.37	20.36
Evening session	91	11175	50.5	40.34	60.66	17	2171	9.8	5.97	15.72
Morning and evening session	165	21262	36.1	21.52	53.86	54	7662	13.0	9.14	18.23
BMI-for-age status (BAZ)										
Thinness (<-2sd)	45	6222	46.8	37.78	56.02	14	1939	14.6	8.31	24.33
Normal (≥-2sd - ≤+1sd)	418	56922	43.1	33.77	52.98	118	17750	13.4	10.24	17.46
Overweight (>+1sd - ≤+2sd)	85	11125	39.2	29.76	49.62	27	4060	14.3	9.59	20.86
Obese (>+2sd)	46	6471	31.6	23.24	41.36	31	4164	20.3	14.37	27.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	81	10708	48.4	39.06	57.91	23	3028	13.7	8.74	20.81
Normal (≥-2sd)	513	70032	40.7	32.02	50.02	167	24886	14.5	11.33	18.29

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	322	51010	26.2	17.00	38.21	132	19810	10.2	7.80	13.22
Locality of school										
Urban	225	36853	34.4	19.93	52.44	72	10756	10.0	7.31	13.63
Rural	97	14157	16.2	12.56	20.76	60	9055	10.4	6.62	15.95
Sex										
Boys	136	22841	24.6	15.62	36.58	68	10138	10.9	7.71	15.27
Girls	186	28169	27.7	17.87	40.35	64	9673	9.5	7.09	12.68
Ethnicity										
Malay	29	3918	14.2	9.32	20.97	24	3608	13.1	9.21	18.17
Chinese	136	24222	55.1	34.78	73.81	15	2563	5.8	2.90	11.37
Indian	2	202	25.0	6.17	62.75			0.0	0.00	0.00
Bumiputera Sabah	129	18566	18.9	14.84	23.79	66	9611	9.8	7.31	13.01
Bumiputera Sarawak	5	629	27.0	15.41	42.99	1	176	7.6	1.89	25.74
Others	21	3473	16.2	9.20	26.97	26	3852	18.0	11.97	26.12
School level										
Primary school	172	33900	32.8	18.07	52.00	68	11690	11.3	7.51	16.72
Secondary school	150	17110	18.8	12.11	27.96	64	8120	8.9	6.80	11.60
Class										
Standard 4	54	11547	30.6	18.90	45.46	21	4150	11.0	6.93	17.01
Standard 5	42	9803	29.6	16.12	48.00	21	4038	12.2	5.72	24.16
Standard 6	76	12551	38.7	17.78	64.83	26	3502	10.8	7.16	15.96
Form 1	24	2566	14.0	8.15	22.95	16	1872	10.2	7.16	14.35
Form 2	38	4099	21.2	12.63	33.41	16	1850	9.6	6.65	13.60
Form 3	31	3503	18.8	9.27	34.40	12	1470	7.9	4.24	14.22
Form 4	20	3294	17.9	11.78	26.35	16	2514	13.7	8.56	21.17
Form 5	37	3648	22.2	10.37	41.42	4	414	2.5	1.12	5.59
School session										
Morning session	153	24548	21.7	14.62	30.90	75	12132	10.7	8.53	13.37
Evening session	34	3868	17.5	10.02	28.74	18	2256	10.2	7.67	13.44
Morning and evening session	135	22594	38.4	19.21	62.02	39	5423	9.2	4.88	16.73
BMI-for-age status (BAZ)										
Thinness (<-2sd)	17	2433	18.3	8.48	35.11	10	1283	9.6	5.32	16.86
Normal (≥-2sd - ≤+1sd)	211	34363	26.0	16.21	39.03	84	12891	9.8	7.07	13.34
Overweight (>+1sd - ≤+2sd)	54	7793	27.5	17.26	40.80	21	3065	10.8	6.68	17.04
Obese (>+2sd)	40	6421	31.4	22.84	41.36	17	2571	12.6	6.54	22.76
Height-for-age status (HAZ)										
Stunting (<-2sd)	24	3766	17.0	10.08	27.34	14	2007	9.1	4.94	16.10
Normal (≥-2sd)	298	47244	27.5	17.97	39.55	118	17803	10.3	7.95	13.36

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	
Sabah	144	21155	10.9	7.43	15.67	65	9829	5.1	3.55	7.16
Locality of school										
Urban	69	11834	11.0	6.46	18.22	25	4252	4.0	2.01	7.66
Rural	75	9322	10.7	6.23	17.78	40	5577	6.4	4.88	8.36
Sex										
Boys	48	7057	7.6	5.24	10.93	33	5077	5.5	3.46	8.56
Girls	96	14098	13.9	8.86	21.08	32	4753	4.7	2.84	7.61
Ethnicity										
Malay	7	1030	3.7	1.55	8.68	7	1096	4.0	2.00	7.71
Chinese	44	8239	18.7	13.76	24.98	11	1749	4.0	2.02	7.67
Indian			0.0	0.00	0.00			0.0	0.00	0.00
Bumiputera Sabah	83	10518	10.7	6.89	16.29	37	5465	5.6	3.49	8.78
Bumiputera Sarawak	1	84	3.6	0.35	28.33	1	84	3.6	0.35	28.33
Others	9	1284	6.0	2.29	14.78	9	1436	6.7	3.02	14.22
School level										
Primary school	56	11241	10.9	6.31	18.15	38	6582	6.4	4.26	9.43
Secondary school	88	9914	10.9	6.36	18.02	27	3247	3.6	1.97	6.36
Class										
Standard 4	17	3813	10.1	4.44	21.38	16	3055	8.1	4.10	15.36
Standard 5	17	3569	10.8	6.85	16.59	8	1484	4.5	2.47	8.02
Standard 6	22	3858	11.9	6.54	20.65	14	2043	6.3	3.12	12.29
Form 1	12	1505	8.2	4.16	15.55	10	1183	6.4	3.20	12.54
Form 2	17	1956	10.1	5.28	18.55	9	1142	5.9	2.30	14.36
Form 3	15	1775	9.5	5.09	17.13	4	474	2.5	0.75	8.29
Form 4	18	2330	12.7	3.37	37.70	1	161	0.9	0.12	6.20
Form 5	26	2348	14.3	6.07	30.17	3	288	1.8	0.56	5.34
School session										
Morning session	62	9155	8.1	5.33	12.09	36	5670	5.0	3.14	7.88
Evening session	14	1651	7.5	4.63	11.81	15	1829	8.3	4.16	15.79
Morning and evening session	68	10349	17.6	10.18	28.66	14	2331	4.0	1.88	8.13
BMI-for-age status (BAZ)										
Thinness (<-2sd)	6	754	5.7	2.22	13.75	3	483	3.6	1.14	10.99
Normal (≥-2sd - ≤+1sd)	101	14971	11.3	7.50	16.78	51	7587	5.7	3.91	8.37
Overweight (>+1sd - ≤+2sd)	25	3684	13.0	7.83	20.81	9	1396	4.9	2.56	9.25
Obese (>+2sd)	11	1662	8.1	5.20	12.46	2	363	1.8	0.43	6.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	18	2493	11.3	6.26	19.48	7	878	4.0	1.97	7.85
Normal (≥-2sd)	125	18579	10.8	7.47	15.38	58	8952	5.2	3.48	7.70

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
Sabah	148	22588	11.6	9.43	14.24
Locality of school					
Urban	87	13939	13.0	10.36	16.19
Rural	61	8648	9.9	6.83	14.20
Sex					
Boys	73	11735	12.7	9.34	16.92
Girls	75	10853	10.7	7.05	15.87
Ethnicity					
Malay	23	3354	12.1	7.57	18.87
Chinese	32	5752	13.1	9.98	16.95
Indian					
Bumiputera Sabah	63	8846	9.0	6.62	12.15
Bumiputera Sarawak	3	547	23.5	8.97	49.02
Others	27	4089	19.1	15.81	22.87
School level					
Primary school	75	13892	13.5	10.08	17.73
Secondary school	73	8696	9.5	7.77	11.68
Class					
Standard 4	30	6485	17.2	10.89	26.04
Standard 5	19	3773	11.4	7.57	16.82
Standard 6	26	3635	11.2	8.45	14.72
Form 1	17	1951	10.6	6.63	16.62
Form 2	17	1908	9.9	6.05	15.71
Form 3	15	1735	9.3	6.63	12.92
Form 4	11	1719	9.4	6.01	14.30
Form 5	13	1382	8.4	5.42	12.88
School session					
Morning session	93	14476	12.8	9.74	16.60
Evening session	17	2276	10.3	6.59	15.73
Morning and evening session	37	5725	9.7	7.18	13.05
BMI-for-age status (BAZ)					
Thinness (<-2sd)	12	2039	15.3	7.99	27.43
Normal (≥-2sd - ≤+1sd)	98	15088	11.4	9.03	14.36
Overweight (>+1sd - ≤+2sd)	20	2868	10.1	5.71	17.31
Obese (>+2sd)	18	2592	12.7	7.23	21.22
Height-for-age status (HAZ)					
Stunting (<-2sd)	16	2433	11.0	6.10	19.05
Normal (≥-2sd)	132	20155	11.7	9.72	14.06

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	
Sabah	1060	149167	45.2	39.68	50.79	902	120287	36.4	32.86	40.15
Locality of school										
Urban	541	80520	51.9	45.40	58.35	338	49219	31.7	27.44	36.36
Rural	519	68646	39.2	32.33	46.54	564	71068	40.6	36.33	45.00
Sex										
Boys	420	61652	37.2	30.45	44.41	473	62869	37.9	33.37	42.64
Girls	640	87514	53.3	48.58	57.90	429	57418	34.9	31.49	38.57
Ethnicity										
Malay	140	19463	43.3	34.20	52.80	140	18109	40.3	34.45	46.34
Chinese	176	28539	52.6	45.86	59.34	102	16937	31.2	24.71	38.62
Indian	5	531	43.7	15.18	77.16	5	588	48.5	17.01	81.18
Bumiputera Sabah	618	83073	43.2	36.63	50.08	556	70446	36.7	31.94	41.65
Bumiputera Sarawak	19	2495	51.7	36.00	67.04	8	1311	27.2	17.09	40.27
Others	102	15066	45.9	37.85	54.22	91	12895	39.3	32.45	46.62
School level										
Primary school	409	72436	54.9	51.46	58.31	249	43383	32.9	28.84	37.20
Secondary school	651	76731	38.7	32.31	45.50	653	76904	38.8	33.98	43.82
Class										
Standard 4	116	23784	53.6	45.97	61.16	79	15978	36.0	29.21	43.48
Standard 5	119	23816	54.9	51.01	58.75	65	12940	29.8	24.07	36.31
Standard 6	174	24836	56.2	47.26	64.71	105	14465	32.7	24.29	42.42
Form 1	155	18393	43.5	36.15	51.22	147	16677	39.5	33.41	45.88
Form 2	129	14570	35.9	27.20	45.64	151	17372	42.8	35.13	50.85
Form 3	119	14317	35.3	25.67	46.31	129	15602	38.5	32.99	44.27
Form 4	96	14772	38.6	26.11	52.78	102	14840	38.8	30.21	48.09
Form 5	152	14678	40.1	30.42	50.59	124	12413	33.9	26.87	41.72
School session										
Morning session	549	81889	43.9	37.24	50.83	496	69506	37.3	33.57	41.15
Evening session	169	20466	41.7	36.19	47.49	165	19419	39.6	32.61	47.03
Morning and evening session	341	46701	49.4	41.56	57.21	241	31362	33.2	27.92	38.84
BMI-for-age status (BAZ)										
Thinness (<-2sd)	57	8322	42.7	34.14	51.76	56	7615	39.1	30.63	48.27
Normal (≥-2sd - ≤+1sd)	747	105259	45.6	39.99	51.33	630	83590	36.2	32.24	40.39
Overweight (>+1sd - ≤+2sd)	157	20908	44.7	37.68	51.90	120	16336	34.9	30.16	39.98
Obese (>+2sd)	98	14569	44.8	34.82	55.15	94	12557	38.6	29.95	48.00
Height-for-age status (HAZ)										
Stunting (<-2sd)	119	15972	40.6	33.12	48.54	128	16635	42.3	35.60	49.27
Normal (≥-2sd)	940	133086	45.8	40.25	51.54	772	103463	35.6	32.14	39.30

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	Prevalence (%)	Never	
				Lower	Upper
Sabah	466	60745	18.4	15.41	21.81
Locality of school					
Urban	184	25377	16.4	13.05	20.31
Rural	282	35368	20.2	15.76	25.52
Sex					
Boys	318	41382	24.9	20.34	30.19
Girls	148	19364	11.8	9.37	14.73
Ethnicity					
Malay	58	7415	16.5	10.37	25.19
Chinese	57	8732	16.1	13.01	19.77
Indian	1	95	7.8	0.86	45.08
Bumiputera Sabah	302	38639	20.1	16.69	24.02
Bumiputera Sarawak	9	1022	21.2	8.45	43.83
Others	39	4843	14.8	9.90	21.45
School level					
Primary school	90	16103	12.2	10.27	14.45
Secondary school	376	44643	22.5	19.33	26.06
Class					
Standard 4	21	4571	10.3	7.05	14.84
Standard 5	31	6621	15.3	10.33	21.97
Standard 6	38	4911	11.1	8.48	14.42
Form 1	65	7177	17.0	11.76	23.91
Form 2	73	8641	21.3	16.84	26.54
Form 3	86	10633	26.2	18.85	35.22
Form 4	61	8662	22.6	15.14	32.42
Form 5	91	9529	26.0	19.17	34.29
School session					
Morning session	259	35056	18.8	14.61	23.87
Evening session	75	9160	18.7	14.99	23.03
Morning and evening session	132	16529	17.5	13.92	21.70
BMI-for-age status (BAZ)					
Thinness (<-2sd)	27	3543	18.2	13.08	24.72
Normal (≥-2sd - ≤+1sd)	323	41966	18.2	15.11	21.72
Overweight (>+1sd - ≤+2sd)	70	9545	20.4	15.58	26.25
Obese (>+2sd)	43	5419	16.7	11.85	22.88
Height-for-age status (HAZ)					
Stunting (<-2sd)	52	6733	17.1	13.63	21.27
Normal (≥-2sd)	411	53740	18.5	15.23	22.31

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	1706	231936	86.1	82.59	88.96	176	26267	9.7	7.67	12.31
Locality of school										
Urban	765	111801	86.2	80.05	90.64	92	14526	11.2	7.90	15.63
Rural	941	120135	86.0	81.85	89.30	84	11741	8.4	6.28	11.16
Sex										
Boys	738	102169	82.0	77.82	85.62	85	12577	10.1	7.79	12.99
Girls	968	129767	89.5	86.06	92.23	91	13691	9.4	6.55	13.44
Ethnicity										
Malay	227	30307	80.7	75.01	85.29	24	3220	8.6	5.59	12.92
Chinese	236	37981	83.5	78.49	87.56	39	7254	16.0	11.17	22.26
Indian	7	831	74.3	32.09	94.64	4	401	35.9	9.90	74.02
Bumiputera Sabah	1052	136209	88.7	84.93	91.66	82	11548	7.5	5.55	10.11
Bumiputera Sarawak	23	3269	85.9	55.40	96.75	5	730	19.2	8.09	39.02
Others	161	23338	83.5	72.72	90.53	22	3114	11.1	7.14	16.96
School level										
Primary school	560	97644	84.3	78.96	88.49	75	14192	12.3	8.74	16.93
Secondary school	1146	134292	87.4	82.77	90.94	101	12075	7.9	6.10	10.08
Class										
Standard 4	153	31315	78.8	70.02	85.47	21	4454	11.2	7.70	16.03
Standard 5	161	32044	87.2	79.26	92.37	24	5003	13.6	8.76	20.54
Standard 6	246	34285	87.2	80.96	91.66	30	4735	12.0	6.91	20.17
Form 1	247	28819	82.2	73.13	88.65	35	3979	11.3	7.61	16.59
Form 2	245	27867	87.2	76.20	93.59	25	2860	9.0	5.89	13.39
Form 3	220	26402	88.2	79.49	93.56	14	1673	5.6	3.29	9.35
Form 4	171	25430	85.9	74.75	92.59	15	2381	8.0	4.72	13.37
Form 5	263	25774	95.1	90.64	97.53	12	1181	4.4	2.38	7.84
School session										
Morning session	885	127589	84.3	80.00	87.78	94	14107	9.3	7.52	11.49
Evening session	292	34545	86.6	72.18	94.16	27	3319	8.3	4.83	13.98
Morning and evening session	528	69692	89.3	85.76	92.01	55	8841	11.3	6.67	18.58
BMI-for-age status (BAZ)										
Thinness (<-2sd)	92	12761	80.1	68.57	88.10	15	2214	13.9	7.82	23.49
Normal (≥-2sd - ≤+1sd)	1194	162430	86.0	82.42	88.96	128	19039	10.1	7.79	12.95
Overweight (>+1sd - ≤+2sd)	242	32005	85.9	78.03	91.31	22	3146	8.4	5.28	13.26
Obese (>+2sd)	175	24442	90.1	82.25	94.71	11	1868	6.9	3.58	12.83
Height-for-age status (HAZ)										
Stunting (<-2sd)	216	28082	86.1	79.67	90.76	16	2368	7.3	3.62	14.03
Normal (≥-2sd)	1487	203556	86.1	82.41	89.04	160	23899	10.1	7.92	12.81

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	
Sabah	41	5895	2.2	1.38	3.45	77	11485	4.3	3.18	5.70
Locality of school										
Urban	20	3121	2.4	1.13	5.05	35	5587	4.3	2.64	6.96
Rural	21	2774	2.0	1.25	3.15	42	5899	4.2	3.01	5.88
Sex										
Boys	30	4286	3.4	2.13	5.52	40	6050	4.9	3.44	6.83
Girls	11	1609	1.1	0.56	2.19	37	5436	3.8	2.56	5.47
Ethnicity										
Malay	9	1166	3.1	1.40	6.75	12	1683	4.5	2.71	7.31
Chinese	7	1166	2.6	0.44	13.50	23	3716	8.2	5.02	13.04
Indian			0.0	0.00	0.00			0.0	0.00	0.00
Bumiputera Sabah	21	2854	1.9	1.20	2.88	33	4870	3.2	2.08	4.81
Bumiputera Sarawak			0.0	0.00	0.00	2	287	7.5	2.38	21.37
Others	4	709	2.5	0.94	6.68	7	929	3.3	1.48	7.27
School level										
Primary school	18	3221	2.8	1.36	5.61	40	7163	6.2	4.47	8.50
Secondary school	23	2674	1.7	1.09	2.76	37	4322	2.8	2.15	3.67
Class										
Standard 4	6	1203	3.0	1.17	7.61	15	2897	7.3	4.43	11.76
Standard 5	7	1377	3.7	1.59	8.59	12	2297	6.2	3.84	10.01
Standard 6	5	641	1.6	0.69	3.79	13	1969	5.0	3.08	8.06
Form 1	6	683	1.9	0.84	4.46	13	1471	4.2	2.84	6.16
Form 2	9	970	3.0	1.33	6.79	9	1011	3.2	2.08	4.78
Form 3	3	364	1.2	0.39	3.70	8	930	3.1	1.88	5.11
Form 4	3	448	1.5	0.49	4.56	3	446	1.5	0.54	4.15
Form 5	2	209	0.8	0.18	3.21	4	464	1.7	0.66	4.41
School session										
Morning session	23	3514	2.3	1.32	4.05	47	7358	4.9	3.50	6.71
Evening session	10	1263	3.2	1.79	5.55	10	1153	2.9	1.78	4.67
Morning and evening session	8	1118	1.4	0.66	3.07	20	2974	3.8	2.55	5.65
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	452	2.8	0.82	9.33	3	400	2.5	0.76	7.99
Normal (≥-2sd - ≤+1sd)	29	4281	2.3	1.35	3.78	56	8380	4.4	3.26	6.01
Overweight (>+1sd - ≤+2sd)	5	621	1.7	0.49	5.51	12	2010	5.4	2.43	11.55
Obese (>+2sd)	4	541	2.0	0.73	5.35	6	694	2.6	1.00	6.38
Height-for-age status (HAZ)										
Stunting (<-2sd)	4	652	2.0	0.69	5.61	8	1243	3.8	1.63	8.63
Normal (≥-2sd)	37	5244	2.2	1.40	3.48	69	10243	4.3	3.29	5.68

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
Sabah	41	6654	2.5	1.56	3.90
Locality of school					
Urban	22	4066	3.1	1.60	6.05
Rural	19	2588	1.9	1.21	2.82
Sex					
Boys	18	2775	2.2	1.29	3.83
Girls	23	3879	2.7	1.59	4.46
Ethnicity					
Malay	6	909	2.4	1.00	5.72
Chinese	11	2344	5.2	2.28	11.25
Indian				0.00	0.00
Bumiputera Sabah	16	2146	1.4	0.82	2.37
Bumiputera Sarawak	1	162	4.3	0.54	26.55
Others	7	1093	3.9	1.47	10.01
School level					
Primary school	20	4007	3.5	1.80	6.55
Secondary school	21	2647	1.7	1.08	2.74
Class					
Standard 4	8	1743	4.4	2.64	7.19
Standard 5	3	553	1.5	0.56	3.99
Standard 6	9	1711	4.4	1.47	12.23
Form 1	9	1141	3.3	1.32	7.78
Form 2	2	223	0.7	0.17	2.80
Form 3	2	249	0.8	0.22	3.08
Form 4	4	619	2.1	0.56	7.46
Form 5	4	415	1.5	0.61	3.79
School session					
Morning session	24	3683	2.4	1.57	3.76
Evening session	9	1166	2.9	1.36	6.17
Morning and evening session	8	1805	2.3	0.53	9.50
BMI-for-age status (BAZ)					
Thinness (<-2sd)	4	600	3.8	1.41	9.67
Normal ($\geq-2sd - \leq+1sd$)	31	4986	2.6	1.63	4.26
Overweight ($>+1sd - \leq+2sd$)	5	899	2.4	0.88	6.45
Obese ($>+2sd$)	1	169	0.6	0.08	4.83
Height-for-age status (HAZ)					
Stunting (<-2sd)	5	710	2.2	0.73	6.31
Normal ($\geq-2sd$)	36	5944	2.5	1.48	4.23

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	
Sabah	1585	212135	67.0	62.69	70.99	124	17760	5.6	4.06	7.70
Locality of school										
Urban	651	94214	63.1	56.73	69.09	48	6683	4.5	2.76	7.19
Rural	934	117921	70.4	65.52	74.85	76	11077	6.6	4.44	9.75
Sex										
Boys	755	101469	64.3	59.41	68.98	75	10787	6.8	4.97	9.34
Girls	830	110667	69.6	64.47	74.25	49	6973	4.4	2.83	6.73
Ethnicity										
Malay	215	28087	64.3	59.31	69.07	28	3892	8.9	6.87	11.49
Chinese	173	27835	54.4	47.83	60.91	11	1812	3.5	1.82	6.80
Indian	3	334	27.5	9.10	59.07	1	107	8.8	0.99	48.49
Bumiputera Sabah	1026	132392	71.7	68.59	74.69	72	10150	5.5	3.74	8.01
Bumiputera Sarawak	25	3192	70.8	51.78	84.57	2	235	5.2	1.06	22.13
Others	143	20295	64.0	56.96	70.47	10	1564	4.9	2.69	8.88
School level										
Primary school	425	74884	59.6	53.17	65.80	47	8729	7.0	3.97	11.90
Secondary school	1160	137252	71.8	68.70	74.67	77	9031	4.7	3.55	6.26
Class										
Standard 4	126	25899	60.6	53.04	67.66	21	4227	9.9	5.30	17.70
Standard 5	124	24321	59.1	48.95	68.55	13	2792	6.8	3.24	13.65
Standard 6	175	24664	59.2	47.78	69.72	13	1709	4.1	2.21	7.51
Form 1	230	26976	65.9	59.94	71.45	31	3495	8.5	5.60	12.81
Form 2	239	27718	70.8	62.04	78.29	14	1668	4.3	2.02	8.78
Form 3	241	29243	75.5	70.16	80.19	10	1119	2.9	1.43	5.75
Form 4	180	26461	72.5	62.68	80.54	11	1649	4.5	1.94	10.15
Form 5	270	26853	74.7	69.69	79.18	11	1101	3.1	1.32	6.96
School session										
Morning session	812	115270	64.8	59.93	69.29	82	12223	6.9	4.50	10.34
Evening session	288	34547	73.4	67.59	78.53	23	2871	6.1	3.74	9.80
Morning and evening session	485	62318	68.1	60.42	74.84	19	2667	2.9	1.99	4.24
BMI-for-age status (BAZ)										
Thinness (<-2sd)	87	11762	64.1	53.09	73.85	14	1887	10.3	6.33	16.29
Normal (≥-2sd - ≤+1sd)	1155	154502	69.7	64.90	74.06	81	11601	5.2	3.70	7.35
Overweight (>+1sd - ≤+2sd)	213	28187	62.7	56.32	68.67	13	2036	4.5	2.64	7.65
Obese (>+2sd)	126	17317	55.6	48.92	62.07	16	2236	7.2	4.09	12.29
Height-for-age status (HAZ)										
Stunting (<-2sd)	199	25367	66.6	58.29	74.08	22	3210	8.4	5.32	13.12
Normal (≥-2sd)	1382	186401	67.0	62.50	71.25	102	14550	5.2	3.72	7.32

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	496	70273	22.2	18.39	26.52	127	16586	5.2	4.21	6.50
Locality of school										
Urban	266	40563	27.2	21.33	33.93	59	7794	5.2	3.53	7.65
Rural	230	29710	17.7	14.74	21.20	68	8792	5.2	4.18	6.57
Sex										
Boys	248	35598	22.6	18.36	27.43	75	9850	6.2	4.67	8.30
Girls	248	34675	21.8	17.46	26.87	52	6735	4.2	3.11	5.73
Ethnicity										
Malay	66	9005	20.6	16.45	25.54	20	2671	6.1	4.48	8.31
Chinese	112	19034	37.2	30.47	44.53	20	2442	4.8	2.48	9.01
Indian	5	570	46.9	18.53	77.50	2	202	16.7	4.99	43.31
Bumiputera Sabah	255	33388	18.1	15.47	21.05	65	8610	4.7	3.68	5.90
Bumiputera Sarawak	5	709	15.7	6.45	33.56	2	371	8.2	2.17	26.63
Others	53	7568	23.9	18.76	29.84	18	2289	7.2	4.43	11.54
School level										
Primary school	208	36141	28.8	22.17	36.46	33	5797	4.6	3.34	6.36
Secondary school	288	34132	17.9	15.50	20.48	94	10788	5.6	4.26	7.44
Class										
Standard 4	53	10777	25.2	18.81	32.91	9	1845	4.3	2.12	8.59
Standard 5	55	11699	28.4	20.11	38.53	12	2336	5.7	4.26	7.53
Standard 6	100	13665	32.8	22.96	44.43	12	1617	3.9	2.07	7.17
Form 1	72	8159	19.9	16.25	24.23	21	2288	5.6	3.24	9.47
Form 2	68	7559	19.3	15.12	24.34	19	2188	5.6	3.31	9.28
Form 3	46	5706	14.7	11.45	18.76	22	2653	6.9	3.73	12.27
Form 4	46	7094	19.4	11.77	30.38	9	1294	3.5	2.03	6.11
Form 5	56	5615	15.6	12.20	19.79	23	2365	6.6	4.94	8.72
School session										
Morning session	291	42015	23.6	19.59	28.15	63	8513	4.8	3.43	6.63
Evening session	61	7211	15.3	12.80	18.24	19	2429	5.2	2.91	9.00
Morning and evening session	144	21047	23.0	15.67	32.41	44	5533	6.0	4.11	8.80
BMI-for-age status (BAZ)										
Thinness (<-2sd)	27	3938	21.5	14.88	29.96	5	753	4.1	1.67	9.77
Normal (\geq -2sd - \leq +1sd)	314	44652	20.1	16.07	24.92	83	10986	5.0	3.94	6.21
Overweight ($>$ +1sd - \leq +2sd)	83	11604	25.8	19.76	32.96	25	3126	7.0	4.20	11.30
Obese ($>$ +2sd)	70	9876	31.7	25.50	38.64	14	1721	5.5	3.11	9.64
Height-for-age status (HAZ)										
Stunting (<-2sd)	53	7784	20.5	14.51	28.03	14	1700	4.5	2.56	7.67
Normal (\geq -2sd)	441	62286	22.4	18.31	27.09	113	14886	5.4	4.28	6.67

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	
Sabah	102	14464	4.4	3.07	6.23	288	41803	12.7	9.87	16.14
Locality of school										
Urban	46	6962	4.5	2.41	8.23	138	20831	13.5	9.28	19.13
Rural	56	7502	4.3	2.94	6.21	150	20972	12.0	8.57	16.51
Sex										
Boys	62	8783	5.3	3.48	8.02	169	24146	14.6	11.23	18.72
Girls	40	5681	3.5	2.11	5.62	119	17658	10.8	8.09	14.17
Ethnicity										
Malay	15	2210	5.0	2.03	11.69	54	8024	18.1	11.55	27.13
Chinese	19	2695	5.0	2.10	11.32	49	7799	14.4	6.96	27.42
Indian	1	163	13.4	1.57	60.14	4	442	36.4	15.97	63.38
Bumiputera Sabah	53	7435	3.9	2.64	5.65	149	20932	10.9	7.94	14.79
Bumiputera Sarawak	1	118	2.4	0.26	19.24	7	870	18.0	8.92	33.03
Others	13	1844	5.6	4.13	7.47	25	3736	11.3	6.90	17.93
School level										
Primary school	52	8635	6.5	4.11	10.27	141	24204	18.4	13.82	23.96
Secondary school	50	5829	2.9	2.16	4.01	147	17600	8.9	7.37	10.70
Class										
Standard 4	15	2947	6.7	3.42	12.63	59	11434	25.9	17.96	35.85
Standard 5	15	2887	6.6	4.35	9.98	31	6062	13.9	9.00	20.90
Standard 6	22	2801	6.3	3.28	11.88	51	6708	15.2	11.94	19.09
Form 1	8	865	2.0	0.86	4.74	45	5253	12.3	9.41	16.04
Form 2	13	1501	3.7	1.90	7.27	35	4032	10.1	7.51	13.36
Form 3	10	1253	3.1	1.31	7.15	24	3019	7.5	4.28	12.70
Form 4	7	976	2.5	1.05	6.08	22	3227	8.4	6.62	10.68
Form 5	12	1235	3.4	1.38	8.06	21	2069	5.7	3.58	8.84
School session										
Morning session	60	9395	5.0	3.20	7.88	171	25966	14.0	11.06	17.45
Evening session	16	1878	3.8	1.85	7.81	50	6429	13.2	9.29	18.34
Morning and evening session	25	3081	3.3	1.88	5.57	67	9408	9.9	6.15	15.66
BMI-for-age status (BAZ)										
Thinness (<-2sd)	12	1582	8.1	4.19	15.00	21	2855	14.6	8.61	23.61
Normal (≥-2sd - ≤+1sd)	61	8886	3.9	2.44	6.05	206	30344	13.2	10.02	17.12
Overweight (>+1sd - ≤+2sd)	16	2131	4.6	2.43	8.44	34	4824	10.4	6.46	16.20
Obese (>+2sd)	12	1782	5.5	2.54	11.42	27	3781	11.6	7.76	17.04
Height-for-age status (HAZ)										
Stunting (<-2sd)	14	1921	4.9	2.83	8.34	36	5432	13.8	8.85	20.99
Normal (≥-2sd)	87	12459	4.3	2.98	6.16	252	36372	12.5	9.89	15.79

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	
Sabah	1729	235882	71.5	67.10	75.59	306	37584	11.4	8.26	15.53
Locality of school										
Urban	782	114239	73.8	67.34	79.40	95	12734	8.2	6.06	11.07
Rural	947	121643	69.5	63.58	74.88	211	24850	14.2	9.26	21.16
Sex										
Boys	841	115324	69.7	64.47	74.38	138	17309	10.5	7.26	14.82
Girls	888	120558	73.4	68.25	78.05	168	20275	12.3	8.71	17.23
Ethnicity										
Malay	232	29986	67.5	56.25	77.06	34	4196	9.4	6.13	14.27
Chinese	234	39202	72.3	59.21	82.46	33	4513	8.3	4.96	13.65
Indian	4	402	33.1	14.31	59.53	2	206	17.0	3.49	53.72
Bumiputera Sabah	1065	138698	72.3	66.71	77.19	207	24901	13.0	8.73	18.85
Bumiputera Sarawak	24	3427	71.0	54.43	83.36	4	413	8.5	2.92	22.53
Others	170	24168	73.0	70.16	75.68	26	3355	10.1	6.24	16.06
School level										
Primary school	504	90302	68.5	61.38	74.79	51	8750	6.6	5.01	8.74
Secondary school	1225	145581	73.6	68.18	78.36	255	28834	14.6	10.19	20.41
Class										
Standard 4	128	27007	61.2	48.62	72.46	13	2736	6.2	4.35	8.77
Standard 5	157	32179	73.9	64.47	81.53	13	2425	5.6	3.25	9.38
Standard 6	219	31115	70.4	65.05	75.20	25	3588	8.1	4.93	13.07
Form 1	276	31833	74.8	70.67	78.58	41	4591	10.8	6.72	16.89
Form 2	253	29259	73.0	67.06	78.27	48	5271	13.2	7.83	21.27
Form 3	254	30722	76.0	67.79	82.61	45	5445	13.5	9.53	18.68
Form 4	184	27735	72.5	59.18	82.69	46	6336	16.6	9.08	28.26
Form 5	258	26032	71.3	58.40	81.42	75	7191	19.7	10.91	32.92
School session										
Morning session	923	131034	70.4	66.27	74.22	147	19730	10.6	8.39	13.31
Evening session	297	35553	72.8	67.28	77.74	45	4958	10.2	4.96	19.67
Morning and evening session	509	69295	73.2	60.85	82.74	114	12895	13.6	6.45	26.50
BMI-for-age status (BAZ)										
Thinness (<-2sd)	99	13703	70.0	59.34	78.80	9	1446	7.4	3.84	13.72
Normal (≥-2sd - ≤+1sd)	1207	164081	71.2	66.17	75.75	223	27143	11.8	8.38	16.31
Overweight (>+1sd - ≤+2sd)	249	33767	72.5	65.48	78.55	47	5858	12.6	8.96	17.38
Obese (>+2sd)	174	24332	74.8	68.40	80.22	22	2649	8.1	4.85	13.35
Height-for-age status (HAZ)										
Stunting (<-2sd)	197	25961	66.1	57.73	73.64	51	5937	15.1	9.52	23.19
Normal (≥-2sd)	1532	209922	72.4	68.46	76.04	250	31159	10.7	8.03	14.24

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	218	31039	9.4	7.88	11.19	614	82880	25.1	22.31	28.15
Locality of school										
Urban	103	16317	10.6	8.00	13.80	233	33486	21.7	19.02	24.56
Rural	115	14723	8.4	6.98	10.07	381	49393	28.2	24.32	32.36
Sex										
Boys	106	15310	9.2	7.55	11.22	302	41983	25.3	21.76	29.18
Girls	112	15730	9.6	7.64	11.97	312	40896	24.9	21.53	28.69
Ethnicity										
Malay	21	2983	6.6	4.06	10.69	76	10147	22.6	19.15	26.45
Chinese	31	5789	10.7	7.23	15.63	72	11281	20.9	16.10	26.68
Indian			0.0	0.00	0.00	4	472	38.9	15.24	69.36
Bumiputera Sabah	138	18003	9.4	7.88	11.07	399	52380	27.2	23.89	30.80
Bumiputera Sarawak	3	467	10.0	3.01	28.63	10	1227	26.4	12.24	47.90
Others	25	3797	11.6	7.27	18.04	53	7373	22.5	17.83	28.08
School level										
Primary school	80	14887	11.3	8.50	14.95	193	33442	25.4	20.12	31.64
Secondary school	138	16153	8.1	6.97	9.48	421	49438	24.9	22.03	28.00
Class										
Standard 4	29	6213	14.2	10.43	19.05	54	11014	25.2	16.80	35.92
Standard 5	20	3986	9.1	4.51	17.66	55	11071	25.4	18.73	33.47
Standard 6	31	4688	10.6	7.02	15.79	84	11357	25.8	19.28	33.52
Form 1	24	2754	6.5	4.30	9.62	76	8785	20.6	16.71	25.21
Form 2	32	3721	9.2	6.43	12.98	91	10537	26.0	19.62	33.66
Form 3	27	3362	8.3	5.69	11.92	83	9911	24.4	18.15	32.06
Form 4	22	3151	8.2	6.19	10.88	68	9784	25.6	21.10	30.60
Form 5	33	3165	8.6	5.89	12.44	103	10421	28.4	24.56	32.54
School session										
Morning session	113	17156	9.2	7.46	11.34	308	44678	24.0	20.64	27.71
Evening session	32	3868	7.9	5.50	11.18	132	15638	31.9	24.89	39.82
Morning and evening session	73	10015	10.6	8.20	13.55	174	22564	23.8	19.35	28.99
BMI-for-age status (BAZ)										
Thinness (<-2sd)	21	2798	14.3	8.97	21.99	39	5242	26.8	20.95	33.51
Normal (≥-2sd - ≤+1sd)	153	22203	9.6	7.60	12.13	441	59469	25.8	22.72	29.14
Overweight (>+1sd - ≤+2sd)	23	3114	6.7	4.65	9.48	77	10401	22.3	18.53	26.54
Obese (>+2sd)	18	2651	8.1	5.19	12.49	57	7768	23.8	17.54	31.42
Height-for-age status (HAZ)										
Stunting (<-2sd)	31	4397	11.1	6.93	17.45	81	10115	25.6	19.81	32.50
Normal (≥-2sd)	184	26370	9.1	7.52	10.95	533	72764	25.1	21.98	28.48

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	
Sabah	1528	206625	62.6	59.47	65.66	68	9446	2.9	2.22	3.69
Locality of school										
Urban	693	99913	64.6	62.12	67.06	31	4887	3.2	2.07	4.81
Rural	835	106712	60.8	55.61	65.84	37	4559	2.6	2.01	3.36
Sex										
Boys	760	102301	61.6	57.26	65.80	45	6420	3.9	2.72	5.47
Girls	768	104324	63.6	59.84	67.25	23	3026	1.8	1.20	2.82
Ethnicity										
Malay	230	30402	67.7	61.51	73.32	11	1378	3.1	1.61	5.76
Chinese	213	34008	63.0	59.23	66.63	17	2901	5.4	4.01	7.16
Indian	7	741	61.1	30.64	84.76			0.0	0.00	0.00
Bumiputera Sabah	905	117333	60.9	57.04	64.70	37	4818	2.5	1.80	3.47
Bumiputera Sarawak	22	2958	63.6	41.23	81.30			0.0	0.00	0.00
Others	151	21183	64.8	59.04	70.12	3	349	1.1	0.24	4.54
School level										
Primary school	447	78509	59.7	54.77	64.53	25	4571	3.5	2.44	4.94
Secondary school	1081	128116	64.5	60.88	67.99	43	4875	2.5	1.76	3.41
Class										
Standard 4	121	24392	55.8	44.89	66.09	9	2129	4.9	2.15	10.63
Standard 5	136	27563	63.2	54.39	71.28	5	966	2.2	0.99	4.88
Standard 6	190	26555	60.2	54.80	65.45	11	1476	3.3	2.26	4.95
Form 1	256	29528	69.4	64.63	73.74	14	1495	3.5	2.16	5.67
Form 2	219	25156	62.1	53.09	70.43	10	1064	2.6	1.27	5.38
Form 3	217	26423	65.2	56.99	72.52	7	857	2.1	0.97	4.55
Form 4	161	24240	63.3	55.93	70.16	8	1099	2.9	1.62	5.02
Form 5	228	22770	62.0	57.58	66.26	4	360	1.0	0.38	2.54
School session										
Morning session	838	117796	63.3	59.36	67.01	43	6562	3.5	2.37	5.21
Evening session	236	28424	58.0	48.31	67.05	10	1104	2.3	1.06	4.73
Morning and evening session	453	60294	63.7	59.10	68.07	15	1780	1.9	1.07	3.29
BMI-for-age status (BAZ)										
Thinness (<-2sd)	79	11211	57.2	48.67	65.41	2	334	1.7	0.40	6.96
Normal (≥-2sd - ≤+1sd)	1061	142751	61.9	57.99	65.72	44	6079	2.6	1.89	3.66
Overweight (>+1sd - ≤+2sd)	229	30796	66.0	61.76	69.94	17	2370	5.1	3.24	7.86
Obese (>+2sd)	156	21569	66.1	59.31	72.21	5	662	2.0	0.79	5.10
Height-for-age status (HAZ)										
Stunting (<-2sd)	179	23757	60.2	52.66	67.33	9	1176	3.0	1.49	5.89
Normal (≥-2sd)	1346	182570	63.0	59.95	65.88	59	8270	2.9	2.14	3.80

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	
Sabah	715	98089	29.7	25.97	33.64	259	36860	11.1	9.31	13.29
Locality of school										
Urban	385	55965	36.1	31.40	41.01	140	20754	13.4	10.88	16.33
Rural	330	42124	24.0	21.05	27.23	119	16106	9.2	7.24	11.56
Sex										
Boys	388	53858	32.4	28.22	36.82	135	18929	11.4	9.23	13.95
Girls	327	44231	26.9	23.01	31.23	124	17931	10.9	8.73	13.56
Ethnicity										
Malay	111	14872	32.9	27.81	38.43	48	6522	14.4	11.57	17.85
Chinese	114	18993	35.2	30.26	40.53	54	8334	15.5	10.32	22.52
Indian	4	449	37.0	16.29	64.01					
Bumiputera Sabah	406	52523	27.3	22.47	32.73	125	17311	9.0	7.04	11.44
Bumiputera Sarawak	15	2078	43.0	25.10	63.03	6	825	17.1	7.24	35.26
Others	65	9173	27.7	20.05	36.94	26	3868	11.7	8.71	15.49
School level										
Primary school	218	38921	29.5	24.59	34.90	98	17148	13.0	10.27	16.29
Secondary school	497	59169	29.8	24.69	35.44	161	19711	9.9	7.77	12.58
Class										
Standard 4	63	12938	29.3	25.29	33.66	26	5270	11.9	8.86	15.89
Standard 5	55	11711	26.8	18.40	37.18	40	7519	17.2	10.92	25.99
Standard 6	100	14272	32.4	25.54	40.04	32	4359	9.9	6.47	14.81
Form 1	101	11568	27.1	22.93	31.76	48	5398	12.7	8.25	18.93
Form 2	106	12019	29.7	22.13	38.58	39	4761	11.8	7.58	17.82
Form 3	110	13121	32.4	22.11	44.63	29	3547	8.7	5.46	13.71
Form 4	80	12137	31.7	24.84	39.48	26	4070	10.6	7.56	14.75
Form 5	100	10323	28.1	21.89	35.32	19	1936	5.3	3.49	7.89
School session										
Morning session	376	53976	28.9	25.73	32.33	156	23393	12.5	10.61	14.75
Evening session	107	12700	25.8	20.40	32.03	42	5514	11.2	6.43	18.79
Morning and evening session	232	31413	33.2	26.15	41.04	60	7842	8.3	5.73	11.82
BMI-for-age status (BAZ)										
Thinness (<-2sd)	30	4066	20.8	14.41	28.95	21	2781	14.2	8.75	22.22
Normal (≥-2sd - ≤+1sd)	498	67669	29.3	25.82	33.01	171	24834	10.7	8.56	13.41
Overweight (>+1sd - ≤+2sd)	108	15005	32.1	25.90	38.95	43	5901	12.6	9.19	17.08
Obese (>+2sd)	79	11349	34.8	27.96	42.24	23	3249	10.0	7.32	13.40
Height-for-age status (HAZ)										
Stunting (<-2sd)	81	10559	26.8	19.71	35.24	25	3548	9.0	5.72	13.86
Normal (≥-2sd)	634	87530	30.1	26.48	34.01	233	33218	11.4	9.66	13.47

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
Sabah	571	75711	22.9	19.36	26.86	441	63761	19.3	15.40	23.87
Locality of school										
Urban	235	34502	22.2	18.32	26.71	201	32558	21.0	13.81	30.55
Rural	336	41209	23.5	18.03	29.98	240	31203	17.8	15.32	20.54
Sex										
Boys	255	34788	20.9	17.26	25.09	208	30471	18.3	13.98	23.63
Girls	316	40923	24.9	20.62	29.75	233	33290	20.3	16.30	24.90
Ethnicity										
Malay	62	8089	17.9	13.72	23.00	42	5675	12.6	8.63	17.93
Chinese	85	13904	25.8	18.83	34.23	103	19024	35.3	22.50	50.60
Indian	3	313	25.8	8.56	56.39	3	387	31.9	8.94	69.14
Bumiputera Sabah	357	44871	23.3	18.97	28.32	250	32432	16.9	14.72	19.22
Bumiputera Sarawak	11	1298	26.9	13.75	45.90	7	903	18.7	6.08	45.03
Others	53	7235	21.9	16.45	28.43	36	5339	16.1	11.38	22.36
School level										
Primary school	156	28468	21.6	17.07	26.86	170	32094	24.3	16.69	33.99
Secondary school	415	47243	23.8	18.92	29.43	271	31667	15.9	13.58	18.63
Class										
Standard 4	36	7792	17.6	12.69	24.02	49	10411	23.6	16.94	31.83
Standard 5	52	10809	24.7	18.66	31.93	42	9697	22.2	12.30	36.63
Standard 6	68	9867	22.4	16.80	29.14	79	11986	27.2	20.25	35.42
Form 1	66	7530	17.7	13.17	23.26	68	8056	18.9	14.28	24.56
Form 2	74	8410	20.8	17.57	24.41	58	6562	16.2	12.58	20.66
Form 3	60	7160	17.7	13.44	22.85	49	5830	14.4	9.91	20.39
Form 4	77	10807	28.2	18.10	41.19	38	5456	14.3	10.64	18.85
Form 5	138	13336	36.3	27.06	46.72	58	5762	15.7	10.42	22.95
School session										
Morning session	258	36202	19.4	17.11	21.91	226	33192	17.8	14.86	21.14
Evening session	86	10050	20.4	15.19	26.86	74	8771	17.8	15.62	20.24
Morning and evening session	227	29459	31.1	23.54	39.86	141	21798	23.0	13.93	35.59
BMI-for-age status (BAZ)										
Thinness (<-2sd)	34	4511	23.0	16.41	31.33	20	2792	14.3	8.43	23.09
Normal (≥-2sd - ≤+1sd)	420	56000	24.2	20.61	28.27	298	43995	19.0	13.97	25.41
Overweight (>+1sd - ≤+2sd)	66	8854	18.9	14.60	24.17	71	9766	20.9	17.09	25.24
Obese (>+2sd)	47	5967	18.3	12.82	25.38	52	7207	22.1	16.67	28.63
Height-for-age status (HAZ)										
Stunting (<-2sd)	81	10817	27.4	20.05	36.27	43	5904	15.0	10.76	20.45
Normal (≥-2sd)	486	64516	22.2	19.08	25.66	398	57857	19.9	15.55	25.12

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	55	6861	2.1	1.56	2.75	658	84246	25.5	21.33	30.12
Locality of school										
Urban	23	2880	1.9	1.25	2.74	222	29714	19.1	14.22	25.29
Rural	32	3980	2.3	1.53	3.34	436	54532	31.1	26.91	35.56
Sex										
Boys	31	4037	2.4	1.68	3.49	302	39547	23.8	19.87	28.16
Girls	24	2824	1.7	1.14	2.58	356	44699	27.2	22.06	33.04
Ethnicity										
Malay	8	1161	2.6	1.02	6.31	91	11690	25.9	20.52	32.04
Chinese	11	1460	2.7	1.28	5.63	38	4959	9.2	5.31	15.46
Indian	2	177	14.6	3.39	45.41	2	206	17.0	4.39	47.65
Bumiputera Sabah	28	3374	1.8	1.16	2.64	448	56605	29.4	25.13	34.10
Bumiputera Sarawak	1	118	2.4	0.26	19.24	7	896	18.6	10.01	31.82
Others	5	570	1.7	0.66	4.41	72	9890	29.9	23.67	36.93
School level										
Primary school	10	1656	1.3	0.73	2.16	154	25496	19.3	13.97	26.08
Secondary school	45	5205	2.6	2.00	3.43	504	58750	29.6	25.01	34.58
Class										
Standard 4	3	565	1.3	0.49	3.28	43	8604	19.5	12.51	29.06
Standard 5	3	589	1.3	0.54	3.31	38	7357	16.8	10.68	25.46
Standard 6	4	501	1.1	0.36	3.51	73	9535	21.6	14.66	30.70
Form 1	8	937	2.2	1.06	4.49	95	11135	26.1	18.76	35.09
Form 2	10	1113	2.8	1.30	5.74	98	11005	27.2	21.33	33.98
Form 3	8	949	2.3	1.33	4.10	104	12777	31.5	22.32	42.41
Form 4	8	1126	2.9	1.17	7.18	72	10391	27.1	19.88	35.89
Form 5	11	1081	2.9	1.70	5.06	135	13442	36.6	29.84	43.95
School session										
Morning session	31	4063	2.2	1.51	3.12	332	45395	24.3	20.65	28.41
Evening session	9	1088	2.2	1.19	4.06	132	15340	31.2	22.07	41.97
Morning and evening session	15	1709	1.8	1.10	2.95	194	23510	24.8	17.31	34.27
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	579	3.0	1.17	7.29	39	5396	27.6	19.89	36.81
Normal (≥-2sd - ≤+1sd)	37	4545	2.0	1.43	2.70	485	61525	26.6	21.81	32.07
Overweight (>+1sd - ≤+2sd)	9	1060	2.3	1.16	4.37	83	10592	22.6	17.71	28.46
Obese (>+2sd)	5	677	2.1	0.95	4.48	48	6434	19.7	14.07	26.90
Height-for-age status (HAZ)										
Stunting (<-2sd)	7	914	2.3	0.95	5.53	91	11375	28.8	21.33	37.72
Normal (≥-2sd)	48	5947	2.0	1.48	2.82	564	72573	25.0	20.96	29.46

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	Percentage (%)	Ice cream	
				Lower	Upper
Sabah	297	42727	12.9	10.52	15.77
Locality of school					
Urban	161	23875	15.4	12.12	19.34
Rural	136	18852	10.7	7.87	14.49
Sex					
Boys	121	16837	10.1	7.72	13.16
Girls	176	25890	15.8	12.38	19.85
Ethnicity					
Malay	35	4752	10.5	7.62	14.33
Chinese	58	9027	16.7	13.32	20.83
Indian					
Bumiputera Sabah	169	23794	12.4	9.61	15.77
Bumiputera Sarawak	1	176	3.6	0.65	17.97
Others	34	4978	15.0	10.45	21.17
School level					
Primary school	137	23798	18.0	15.00	21.51
Secondary school	160	18929	9.5	7.72	11.71
Class					
Standard 4	29	5804	13.1	10.50	16.34
Standard 5	49	9364	21.4	14.65	30.17
Standard 6	59	8629	19.6	16.46	23.11
Form 1	48	5299	12.4	7.72	19.40
Form 2	24	2657	6.6	3.84	11.01
Form 3	41	5006	12.3	9.33	16.16
Form 4	21	3421	8.9	5.33	14.61
Form 5	26	2546	6.9	4.29	11.03
School session					
Morning session	187	27666	14.8	12.06	18.09
Evening session	34	3998	8.1	5.77	11.31
Morning and evening session	76	11063	11.7	8.21	16.38
BMI-for-age status (BAZ)					
Thinness (<-2sd)	16	2363	12.1	7.85	18.11
Normal ($\geq-2sd$ - $\leq+1sd$)	200	29263	12.7	9.71	16.35
Overweight ($>+1sd$ - $\leq+2sd$)	49	6656	14.2	11.02	18.17
Obese ($>+2sd$)	31	4362	13.4	9.44	18.56
Height-for-age status (HAZ)					
Stunting (<-2sd)	28	4127	10.5	6.66	16.06
Normal ($\geq-2sd$)	268	38517	13.3	10.84	16.10

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	289	40817	12.4	9.84	15.48	1444	195942	59.5	53.33	65.34
Locality of school										
Urban	153	22586	14.6	10.80	19.51	620	89916	58.2	47.88	67.90
Rural	136	18230	10.4	7.67	13.99	824	106025	60.6	53.47	67.26
Sex										
Boys	166	22957	13.8	11.04	17.21	704	95630	57.6	51.06	63.96
Girls	123	17860	10.9	8.05	14.66	740	100312	61.3	55.10	67.23
Ethnicity										
Malay	42	6036	13.4	9.64	18.41	219	28563	63.6	52.38	73.46
Chinese	42	6527	12.2	9.33	15.69	161	24822	46.2	32.69	60.32
Indian	7	785	64.7	34.62	86.36			0.0	0.00	0.00
Bumiputera Sabah	169	23071	12.0	9.09	15.72	897	119106	62.1	56.51	67.29
Bumiputera Sarawak	5	749	16.1	6.60	34.24	18	2381	51.2	35.57	66.57
Others	31	4434	13.4	9.06	19.48	142	20286	61.5	50.21	71.65
School level										
Primary school	112	18862	14.4	10.69	18.99	414	73085	55.6	44.29	66.37
Secondary school	177	21955	11.1	7.96	15.24	1030	122856	62.0	55.63	68.07
Class										
Standard 4	33	6422	14.5	9.15	22.18	128	26004	58.7	46.61	69.75
Standard 5	29	5673	13.1	8.03	20.54	130	25375	58.4	44.38	71.26
Standard 6	50	6768	15.5	9.78	23.65	156	21707	49.7	37.39	62.01
Form 1	53	6340	15.0	9.83	22.13	234	26637	62.9	55.44	69.78
Form 2	31	3823	9.4	5.03	16.95	227	26025	64.1	58.84	69.10
Form 3	39	4923	12.2	7.93	18.33	220	26623	66.0	59.55	71.94
Form 4	24	3547	9.3	5.42	15.52	165	25314	66.4	48.60	80.53
Form 5	30	3321	9.1	3.60	21.03	184	18257	49.8	40.79	58.91
School session										
Morning session	161	23384	12.6	9.69	16.17	812	117149	63.0	56.61	69.00
Evening session	57	7337	14.9	7.89	26.45	266	31814	64.7	61.15	68.18
Morning and evening session	70	9984	10.6	6.90	15.92	366	46979	49.8	40.79	58.85
BMI-for-age status (BAZ)										
Thinness (<-2sd)	20	2616	13.4	7.32	23.34	75	10247	52.6	39.63	65.23
Normal (≥-2sd - ≤+1sd)	199	28413	12.3	9.67	15.58	1019	137851	59.8	53.48	65.82
Overweight (>+1sd - ≤+2sd)	42	5872	12.7	8.97	17.57	209	28237	60.9	51.75	69.26
Obese (>+2sd)	28	3916	12.1	7.77	18.24	139	19404	59.7	52.76	66.34
Height-for-age status (HAZ)										
Stunting (<-2sd)	40	5190	13.2	8.56	19.81	179	23901	60.8	51.99	68.93
Normal (≥-2sd)	249	35627	12.3	9.70	15.48	1263	171837	59.3	53.18	65.23

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
Sabah	690	92687	28.1	21.00	36.57
Locality of school					
Urban	285	41909	27.1	15.88	42.36
Rural	405	50778	29.0	21.14	38.38
Sex					
Boys	341	47327	28.5	20.97	37.51
Girls	349	45359	27.7	20.30	36.64
Ethnicity					
Malay	77	10333	23.0	15.36	32.95
Chinese	129	22358	41.6	26.15	58.96
Indian	4	429	35.3	13.64	65.38
Bumiputera Sabah	408	49771	25.9	18.85	34.53
Bumiputera Sarawak	12	1522	32.7	16.80	53.94
Others	60	8273	25.1	14.23	40.30
School level					
Primary school	219	39494	30.0	17.80	46.01
Secondary school	471	53193	26.9	19.06	36.42
Class					
Standard 4	55	11907	26.9	16.69	40.22
Standard 5	56	12370	28.5	14.18	48.99
Standard 6	108	15218	34.8	20.75	52.17
Form 1	81	9375	22.1	15.11	31.23
Form 2	95	10735	26.5	18.58	36.17
Form 3	73	8781	21.8	14.59	31.21
Form 4	69	9252	24.3	10.68	46.21
Form 5	153	15049	41.1	27.54	56.14
School session					
Morning session	326	45361	24.4	17.24	33.34
Evening session	87	9985	20.3	12.59	31.12
Morning and evening session	277	37341	39.6	28.57	51.80
BMI-for-age status (BAZ)					
Thinness (<-2sd)	45	6617	34.0	20.65	50.41
Normal (≥-2sd - ≤+1sd)	479	64248	27.9	20.62	36.51
Overweight (>+1sd - ≤+2sd)	94	12290	26.5	18.35	36.62
Obese (>+2sd)	68	9164	28.2	20.79	37.04
Height-for-age status (HAZ)					
Stunting (<-2sd)	80	10228	26.0	16.79	37.98
Normal (≥-2sd)	606	82092	28.4	21.26	36.71

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	304	41546	12.6	10.02	15.73	279	39576	12.0	9.62	14.89
Locality of school										
Urban	109	16011	10.4	7.38	14.35	142	20962	13.6	11.07	16.51
Rural	195	25535	14.6	11.04	19.02	137	18614	10.6	7.14	15.55
Sex										
Boys	139	19299	0.1	9.4%	14.3%	157	21875	13.2	10.22	16.83
Girls	165	22247	0.1	9.9%	18.5%	122	17701	10.8	8.26	14.05
Ethnicity										
Malay	34	4768	10.6	6.62	16.63	64	8507	19.0	12.98	26.87
Chinese	33	5593	10.4	6.24	16.70	54	8934	16.5	14.63	18.63
Indian	2	205	16.9	3.90	50.36					
Bumiputera Sabah	196	25549	13.3	9.69	18.03	137	18810	9.8	7.58	12.60
Bumiputera Sarawak	3	290	6.2	1.87	18.81	1	112	2.4	0.28	18.10
Others	36	5142	15.5	12.10	19.73	23	3213	9.7	7.66	12.23
School level										
Primary school	103	18374	14.0	10.56	18.25	101	18247	13.9	10.69	17.80
Secondary school	201	23172	11.7	8.33	16.18	178	21329	10.8	7.72	14.82
Class										
Standard 4	34	7087	16.1	12.50	20.55	34	7193	16.4	11.52	22.74
Standard 5	28	5320	12.3	7.86	18.60	28	5313	12.2	6.43	22.05
Standard 6	41	5968	13.5	8.47	20.82	39	5741	13.0	9.59	17.35
Form 1	31	3479	8.2	5.20	12.63	51	5683	13.4	9.31	18.80
Form 2	63	7135	17.7	11.92	25.46	32	3883	9.6	4.78	18.47
Form 3	49	5845	14.5	10.32	19.89	34	3995	9.9	6.43	14.90
Form 4	21	2994	7.8	3.09	18.40	29	4637	12.1	7.25	19.55
Form 5	37	3719	10.2	6.95	14.68	32	3131	8.6	5.53	13.05
School session										
Morning session	159	23138	12.4	9.51	16.13	157	23248	12.5	10.29	15.13
Evening session	72	8334	17.0	10.59	26.19	40	5029	10.3	5.07	19.68
Morning and evening session	73	10074	10.6	8.22	13.67	81	11188	11.8	7.86	17.40
BMI-for-age status (BAZ)										
Thinness (<-2sd)	12	1507	7.7	4.23	13.61	8	1197	6.1	2.51	14.14
Normal (≥-2sd - ≤+1sd)	223	30211	13.1	10.33	16.51	197	27931	12.1	9.62	15.18
Overweight (>+1sd - ≤+2sd)	44	6274	13.4	9.30	19.04	49	6654	14.3	10.35	19.32
Obese (>+2sd)	25	3553	11.0	7.08	16.57	25	3794	11.7	7.21	18.41
Height-for-age status (HAZ)										
Stunting (<-2sd)	43	5738	14.6	10.53	19.87	31	4359	11.1	7.35	16.38
Normal (≥-2sd)	261	35808	12.4	9.65	15.69	248	35217	12.2	9.75	15.05

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	552	71326	21.6	17.62	26.27	232	31057	9.4	6.33	13.81
Locality of school										
Urban	214	30560	19.8	14.39	26.54	110	15544	10.1	4.95	19.34
Rural	338	40766	23.3	17.80	29.84	122	15513	8.9	6.10	12.70
Sex										
Boys	301	38963	23.5	18.92	28.72	82	10762	6.5	4.56	9.13
Girls	251	32363	19.8	15.25	25.25	150	20294	12.4	7.71	19.34
Ethnicity										
Malay	79	9840	21.9	15.07	30.80	30	3988	8.9	5.07	15.13
Chinese	62	9960	18.4	15.13	22.27	13	1661	3.1	1.29	7.12
Indian	2	221	18.2	3.78	55.74	1	133	11.0	1.59	48.47
Bumiputera Sabah	358	44528	23.2	18.38	28.87	159	21272	11.1	7.61	15.89
Bumiputera Sarawak	6	684	14.7	6.06	31.54	3	460	9.9	2.13	35.57
Others	45	6093	18.4	13.74	24.21	26	3543	10.7	5.91	18.62
School level										
Primary school	95	17364	13.2	9.96	17.28	47	7256	5.5	2.94	10.12
Secondary school	457	53962	27.2	23.32	31.55	185	23801	12.0	7.81	18.05
Class										
Standard 4	30	6434	14.6	10.51	20.04	9	1749	4.0	2.32	6.73
Standard 5	21	4402	10.1	7.02	14.43	11	2029	4.7	1.90	11.04
Standard 6	44	6528	14.8	9.29	22.66	27	3478	7.9	3.58	16.40
Form 1	98	11333	26.6	22.50	31.23	48	6044	14.2	8.72	22.29
Form 2	96	11031	27.4	22.34	33.02	27	3353	8.3	4.36	15.28
Form 3	98	11791	29.2	21.93	37.65	41	5141	12.7	8.07	19.48
Form 4	65	9760	25.5	17.57	35.47	30	5121	13.4	5.87	27.67
Form 5	100	10047	27.5	20.25	36.18	39	4142	11.3	5.16	23.12
School session										
Morning session	281	38010	20.4	15.44	26.56	132	18367	9.9	6.72	14.29
Evening session	122	14637	29.9	24.95	35.34	36	4880	10.0	4.31	21.39
Morning and evening session	149	18679	19.7	15.84	24.30	64	7810	8.2	4.03	16.15
BMI-for-age status (BAZ)										
Thinness (<-2sd)	37	4771	24.4	15.79	35.61	15	1998	10.2	5.76	17.43
Normal (≥-2sd - ≤+1sd)	374	47594	20.7	16.45	25.61	161	21699	9.4	6.32	13.81
Overweight (>+1sd - ≤+2sd)	87	12188	26.1	21.15	31.76	31	4015	8.6	4.90	14.65
Obese (>+2sd)	52	6571	20.3	14.75	27.15	25	3345	10.3	6.18	16.71
Height-for-age status (HAZ)										
Stunting (<-2sd)	73	9241	23.5	17.75	30.42	32	4447	11.3	6.16	19.85
Normal (≥-2sd)	477	61882	21.4	17.34	26.01	200	26610	9.2	6.24	13.32

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	230	31333	9.5	7.39	12.15	266	35467	10.8	7.87	14.54
Locality of school										
Urban	123	18217	11.8	8.39	16.31	95	12706	8.2	4.94	13.38
Rural	107	13116	7.5	5.59	9.97	171	22761	13.0	9.08	18.27
Sex										
Boys	107	15248	9.2	7.17	11.70	139	18208	11.0	7.75	15.30
Girls	123	16085	9.8	7.11	13.43	127	17259	10.5	7.38	14.86
Ethnicity										
Malay	20	2634	5.9	3.62	9.39	36	4693	10.5	7.13	15.11
Chinese	41	6327	11.7	8.28	16.31	19	2904	5.4	3.41	8.38
Indian	1	90	7.4	0.98	39.24	1	87	7.2	0.79	42.94
Bumiputera Sabah	155	20387	10.6	7.72	14.47	171	22613	11.8	8.03	16.99
Bumiputera Sarawak	4	703	15.1	5.48	35.36	3	325	7.0	2.24	19.76
Others	9	1192	3.6	1.84	6.93	36	4844	14.6	10.47	20.08
School level										
Primary school	68	12176	9.3	7.02	12.10	79	13963	10.6	6.02	18.03
Secondary school	162	19157	9.7	6.65	13.87	187	21504	10.9	7.52	15.42
Class										
Standard 4	22	4421	10.1	6.58	15.07	25	5052	11.5	7.04	18.21
Standard 5	16	3133	7.2	4.82	10.67	26	5108	11.8	4.74	26.34
Standard 6	30	4621	10.5	5.93	17.76	28	3803	8.6	5.43	13.36
Form 1	26	2901	6.8	4.51	10.18	46	5221	12.3	7.78	18.83
Form 2	31	3289	8.2	4.91	13.26	38	4202	10.4	6.44	16.43
Form 3	32	3918	9.7	5.46	16.63	32	3913	9.7	5.61	16.20
Form 4	35	5321	13.9	7.02	25.66	30	4142	10.8	5.66	19.72
Form 5	38	3729	10.2	6.87	14.92	41	4026	11.0	6.09	19.13
School session										
Morning session	107	16334	8.8	6.12	12.45	134	18865	10.1	6.65	15.18
Evening session	43	4893	10.0	6.42	15.21	54	6189	12.6	7.99	19.41
Morning and evening session	80	10106	10.7	7.94	14.20	78	10413	11.0	8.29	14.45
BMI-for-age status (BAZ)										
Thinness (<-2sd)	9	1237	6.3	2.21	16.71	19	2688	13.7	8.96	20.45
Normal (≥-2sd - ≤+1sd)	161	21997	9.5	7.69	11.79	185	24327	10.6	7.66	14.39
Overweight (>+1sd - ≤+2sd)	39	5155	11.0	6.88	17.26	31	3982	8.5	5.14	13.83
Obese (>+2sd)	21	2944	9.1	5.35	14.98	31	4469	13.8	8.77	20.98
Height-for-age status (HAZ)										
Stunting (<-2sd)	21	2543	6.5	3.87	10.62	34	4645	11.8	7.12	18.97
Normal (≥-2sd)	209	28789	9.9	7.76	12.64	232	30822	10.6	7.72	14.49

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				
	Count	Estimated Population	Percentage (%)	Ice cream	
				Lower	Upper
Sabah	298	41329	12.5	8.80	17.56
Locality of school					
Urban	169	24017	15.5	9.09	25.29
Rural	129	17312	9.9	6.94	13.90
Sex					
Boys	129	17599	10.6	7.41	14.94
Girls	169	23730	14.5	9.69	21.14
Ethnicity					
Malay	30	3970	8.9	4.93	15.38
Chinese	48	6628	12.3	6.46	22.06
Indian					
Bumiputera Sabah	171	23645	12.3	8.77	17.06
Bumiputera Sarawak	5	632	13.6	5.48	29.90
Others	44	6453	19.5	11.62	30.85
School level					
Primary school	145	23874	18.1	11.25	27.93
Secondary school	153	17454	8.8	6.21	12.35
Class					
Standard 4	22	4387	10.0	6.03	16.08
Standard 5	59	11119	25.6	15.13	39.94
Standard 6	64	8368	18.9	10.75	31.14
Form 1	40	4239	10.0	5.02	18.81
Form 2	29	3229	8.0	4.83	13.00
Form 3	37	4281	10.6	7.00	15.71
Form 4	22	3317	8.7	4.81	15.12
Form 5	25	2389	6.5	4.09	10.31
School session					
Morning session	193	28262	15.2	10.20	22.07
Evening session	32	3793	7.7	5.20	11.38
Morning and evening session	73	9274	9.8	5.92	15.79
BMI-for-age status (BAZ)					
Thinness (<-2sd)	17	2505	12.8	6.60	23.33
Normal (≥-2sd - ≤+1sd)	224	31165	13.5	9.27	19.32
Overweight (>+1sd - ≤+2sd)	31	3956	8.5	5.09	13.77
Obese (>+2sd)	26	3702	11.4	5.92	20.88
Height-for-age status (HAZ)					
Stunting (<-2sd)	23	3079	7.8	4.47	13.37
Normal (≥-2sd)	275	38250	13.2	9.34	18.33

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
Sabah	890	119703	36.3	33.17	39.63	884	120846	36.7	32.90	40.64
Locality of school										
Urban	413	60037	38.8	33.99	43.74	366	53993	34.9	28.53	41.76
Rural	477	59666	34.2	30.50	38.10	518	66853	38.3	34.28	42.52
Sex										
Boys	384	51698	31.2	27.14	35.57	454	61668	37.2	33.67	40.90
Girls	506	68004	41.5	36.81	46.43	430	59178	36.2	31.46	41.12
Ethnicity										
Malay	107	14036	31.4	27.25	35.92	128	17604	39.4	32.54	46.72
Chinese	130	20698	38.4	29.90	47.65	96	15505	28.8	21.60	37.16
Indian	4	425	35.1	12.19	67.74	4	424	35.0	13.47	64.97
Bumiputera Sabah	550	70717	36.9	32.61	41.34	530	69553	36.3	32.69	39.99
Bumiputera Sarawak	17	2218	47.2	27.59	67.72	16	2157	45.9	27.31	65.70
Others	82	11608	35.1	30.15	40.32	110	15603	47.1	39.95	54.44
School level										
Primary school	262	45994	34.9	30.30	39.70	302	51205	38.8	32.21	45.82
Secondary school	628	73708	37.3	33.16	41.70	582	69642	35.3	31.03	39.76
Class										
Standard 4	71	14233	32.2	26.83	38.19	87	17151	38.9	31.03	47.30
Standard 5	86	16868	38.5	32.42	45.06	83	16234	37.1	29.10	45.87
Standard 6	105	14893	33.8	27.89	40.25	132	17819	40.4	31.00	50.63
Form 1	98	11185	26.6	21.59	32.20	143	16609	39.4	32.43	46.90
Form 2	111	12608	31.1	23.84	39.35	125	14732	36.3	28.54	44.85
Form 3	126	15062	37.6	29.00	47.11	107	13183	32.9	27.94	38.34
Form 4	114	17247	45.4	37.13	53.95	87	13034	34.3	28.39	40.76
Form 5	179	17606	48.0	41.16	54.82	120	12084	32.9	24.68	42.35
School session										
Morning session	478	68582	36.9	33.07	40.85	504	72633	39.1	35.41	42.84
Evening session	116	13773	28.0	21.81	35.24	154	18569	37.8	33.20	42.63
Morning and evening session	296	37347	39.6	34.72	44.79	226	29645	31.5	23.96	40.09
BMI-for-age status (BAZ)										
Thinness (<-2sd)	36	5006	25.7	18.77	34.22	56	7789	40.1	30.70	50.21
Normal (≥-2sd - ≤+1sd)	616	82468	35.8	32.32	39.43	626	85797	37.2	33.10	41.58
Overweight (>+1sd - ≤+2sd)	134	18280	39.4	35.02	44.01	118	15300	33.0	27.33	39.20
Obese (>+2sd)	101	13662	41.8	34.87	49.16	83	11865	36.3	29.69	43.56
Height-for-age status (HAZ)										
Stunting (<-2sd)	100	13285	33.8	26.04	42.52	118	15523	39.5	32.52	46.90
Normal (≥-2sd)	787	106131	36.7	33.40	40.04	765	105229	36.3	32.68	40.18

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	
Sabah	79	11588	3.5	2.51	4.92	142	20264	6.2	4.91	7.68
Locality of school										
Urban	42	6674	4.3	2.60	7.06	63	9601	6.2	4.43	8.61
Rural	37	4914	2.8	1.99	3.96	79	10663	6.1	4.51	8.24
Sex										
Boys	59	8217	5.0	3.74	6.54	79	11334	6.8	4.91	9.45
Girls	20	3370	2.1	1.11	3.78	63	8931	5.5	4.05	7.31
Ethnicity										
Malay	10	1131	2.5	1.39	4.58	19	2725	6.1	3.56	10.25
Chinese	14	2565	4.8	2.07	10.57	27	4312	8.0	6.50	9.80
Indian										
Bumiputera Sabah	43	5977	3.1	2.13	4.54	82	11166	5.8	4.31	7.81
Bumiputera Sarawak	1	100	2.1	0.28	14.28	1	203	4.3	0.77	20.71
Others	11	1814	5.5	2.43	11.88	13	1858	5.6	3.43	9.07
School level										
Primary school	34	6268	4.7	2.89	7.70	58	10793	8.2	6.22	10.68
Secondary school	45	5320	2.7	1.89	3.83	84	9471	4.8	3.76	6.10
Class										
Standard 4	11	2330	5.3	2.74	9.93	24	4781	10.8	6.78	16.86
Standard 5	9	1718	3.9	2.00	7.55	18	3806	8.7	4.89	15.00
Standard 6	14	2221	5.0	2.26	10.83	16	2206	5.0	2.73	9.02
Form 1	19	2004	4.8	3.09	7.27	32	3397	8.1	4.74	13.39
Form 2	11	1311	3.2	1.23	8.23	16	1893	4.7	2.92	7.36
Form 3	8	1031	2.6	0.93	6.93	11	1282	3.2	1.93	5.27
Form 4	4	616	1.6	0.58	4.44	11	1581	4.2	2.17	7.84
Form 5	3	357	1.0	0.29	3.26	14	1317	3.6	2.00	6.37
School session										
Morning session	47	7104	3.8	2.48	5.85	83	12333	6.6	4.94	8.85
Evening session	15	1746	3.6	2.00	6.25	25	2990	6.1	4.38	8.39
Morning and evening session	17	2738	2.9	1.52	5.49	34	4941	5.2	3.93	6.97
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	365	1.9	0.47	7.23	7	1123	5.8	2.70	11.94
Normal (≥-2sd - ≤+1sd)	55	8438	3.7	2.42	5.51	96	13924	6.0	4.50	8.07
Overweight (>+1sd - ≤+2sd)	12	1685	3.6	1.96	6.64	22	2959	6.4	3.59	11.10
Obese (>+2sd)	9	1100	3.4	1.59	7.01	17	2258	6.9	4.43	10.65
Height-for-age status (HAZ)										
Stunting (<-2sd)	10	1293	3.3	1.15	9.05	26	3580	9.1	6.05	13.49
Normal (≥-2sd)	69	10295	3.6	2.60	4.85	116	16684	5.8	4.52	7.31

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 (%)	Not affected	
				Lower	Upper
Sabah	694	92987	28.2	24.49	32.29
Locality of school					
Urban	304	43358	28.0	21.36	35.74
Rural	390	49629	28.4	24.97	32.20
Sex					
Boys	338	46344	28.0	22.78	33.82
Girls	356	46643	28.5	25.29	31.93
Ethnicity					
Malay	92	11966	26.8	21.50	32.84
Chinese	114	18332	34.0	23.33	46.58
Indian	3	364	30.0	8.16	67.37
Bumiputera Sabah	432	55234	28.8	25.35	32.51
Bumiputera Sarawak	5	619	13.2	5.82	27.15
Others	48	6472	19.5	12.87	28.56
School level					
Primary school	182	32977	25.0	18.11	33.41
Secondary school	512	60010	30.4	27.06	33.94
Class					
Standard 4	42	9496	21.5	13.59	32.32
Standard 5	48	10217	23.3	15.41	33.75
Standard 6	92	13264	30.1	21.99	39.68
Form 1	96	11435	27.2	20.91	34.45
Form 2	116	12975	32.0	25.34	39.43
Form 3	104	12507	31.2	23.67	39.96
Form 4	81	11459	30.2	23.36	37.97
Form 5	115	11634	31.7	27.14	36.61
School session					
Morning session	320	44432	23.9	20.55	27.59
Evening session	135	16079	32.7	27.24	38.75
Morning and evening session	238	32366	34.4	28.00	41.33
BMI-for-age status (BAZ)					
Thinness (<-2sd)	49	6621	34.1	24.66	44.89
Normal (≥-2sd - ≤+1sd)	492	65379	28.4	24.56	32.53
Overweight (>+1sd - ≤+2sd)	95	12810	27.6	21.79	34.34
Obese (>+2sd)	56	7988	24.5	17.41	33.23
Height-for-age status (HAZ)					
Stunting (<-2sd)	80	10078	25.6	21.46	30.30
Normal (≥-2sd)	612	82720	28.6	24.63	32.87

3.5 Physical activity among adolescents (Primary 4 To Secondary 5) In Sabah

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3.5.1 Introduction

Physical activity is defined as any bodily 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 of Malaysia adolescents and the specific objectives were 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 Sabah was 2.33 (95% CI: 2.23, 2.42) (**Table 3.5.1**). Overall, a total of 45.6 % (95% CI: 39.52, 51.89) adolescents were physically active and 54.4% (95% CI: 48.11, 60.48) of them were not active. In terms of school locality, the prevalence of students who were active in urban area were 47.9% (95% CI: 38.55, 57.42) and from rural areas were (43.6% (95% CI: 35.93, 51.60)). The prevalence of physically active was significantly higher among boys (53.8% (95% CI: 47.70, 59.82)) compared to girls, 37.4% (95% CI: 30.47, 44.84). By school level, primary students [(60.5% (95% CI: 55.33, 65.46))] showed higher prevalence of physically active than secondary students [(35.9% (95% CI: 32.84, 39.15))]. In term of BMI-for-age status, there was no significant difference of physically active among thinness [32.7% (95% CI: 24.19, 42.59)], normal [46.4% (95% CI: 40.76, 52.13)], overweight [46.7% (95% CI: 36.25, 57.36)] and obese [45.8% (95% CI: 33.95, 58.19)] (**Table 3.5.2**).

The most popular spare-time physical activity according to percentage of adolescents in Sabah were walking for exercise [82.5% (95% CI: 79.93, 84.76)] (**Table 3.5.3**). The prevalence of students who reported did not attend/very rare participated in PE class was 21.6% (95% CI: 18.53, 25.12)] (**Table 3.5.4**). During school days, 29.3% (95% CI: 26.09, 32.72) of adolescents watched television, using computer and playing video games more than 2 hours per day (**Table 3.5.6**). Meanwhile, 42.2% (95% CI: 37.89, 46.60) of the adolescents engaged on these activities more than 2 hours during weekend (**Table 3.5.5**).

3.5.5 Discussion

The prevalence of physically active among adolescents in Sabah (45.6%) was slightly higher than the national prevalence (44.6%). The prevalence of physically active was significantly higher among boys and primary students than girls and secondary 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), 54.4% of children and adolescents in Sabah were physically inactive. The prevalence of physically inactive among Malaysian adolescents was slightly decreased as compared to the Malaysian School-Based Nutrition Survey (2012), but remained 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. In addition, 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 instil active lifestyle, limit the amount of sedentary and screen time behaviors for their children. Improving technique for physical activity assessment is necessary.

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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
SABAH	2.33	2.23	2.42
Locality of school			
Urban	2.36	2.22	2.49
Rural	2.30	2.17	2.42
Sex			
Boys	2.44	2.35	2.53
Girls	2.21	2.10	2.32
Class			
Standard 4	2.56	2.49	2.62
Standard 5	2.58	2.47	2.70
Standard 6	2.49	2.34	2.63
Form 1	2.31	2.24	2.38
Form 2	2.23	2.16	2.31
Form 3	2.11	2.01	2.21
Form 4	2.13	2.02	2.25
Form 5	2.12	2.02	2.21
Ethnicity			
Malay	2.29	2.17	2.41
Chinese	2.40	2.22	2.58
Indian	1.94	1.54	2.35
Bumiputera Sabah	2.31	2.21	2.41
Bumiputera Sarawak	2.42	2.10	2.74
Others	2.34	2.14	2.54
School Category			
Primary	2.54	2.46	2.63
Secondary	2.18	2.14	2.23
BMI-for-age status (BAZ)			
Thinness (<-2sd)	2.18	2.04	2.32
Normal (≥-2sd - ≤+1sd)	2.33	2.24	2.43
Overweight (>+1sd - ≤+2sd)	2.33	2.19	2.46
Obese (>+2sd)	2.34	2.19	2.48
Height-for-age status (HAZ)			
Stunting (<-2sd)	2.30	2.18	2.42
Normal (≥-2sd)	2.33	2.23	2.42

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	
SABAH	988	140209	45.6	39.52	51.89	1272	167002	54.4	48.11	60.48
Locality of School										
Urban	454	69570	47.9	38.55	57.42	537	75628	52.1	42.58	61.45
Rural	534	70639	43.6	35.93	51.60	735	91374	56.4	48.40	64.07
Sex										
Boys	596	83101	53.8	47.70	59.82	530	71317	46.2	40.18	52.30
Girls	392	57108	37.4	30.47	44.84	742	95685	62.6	55.16	69.53
Class										
Standard 4	124	25630	64.5	57.76	70.71	69	14108	35.5	29.29	42.24
Standard 5	124	24663	60.9	53.57	67.80	76	15821	39.1	32.20	46.43
Standard 6	169	23133	56.2	45.42	66.49	125	18004	43.8	33.51	54.58
Form 1	150	16889	42.5	36.39	48.85	194	22848	57.5	51.15	63.61
Form 2	129	14848	40.4	35.58	45.50	190	21865	59.6	54.50	64.42
Form 3	98	11980	32.2	26.74	38.24	208	25200	67.8	61.76	73.26
Form 4	79	11441	31.0	23.22	40.05	170	25454	69.0	59.95	76.78
Form 5	115	11626	32.9	26.24	40.34	240	23701	67.1	59.66	73.76
Ethnicity										
Malay	130	17689	43.8	37.02	50.87	173	22677	56.2	49.13	62.98
Chinese	146	26018	50.8	38.06	63.51	168	25160	49.2	36.49	61.94
Indian	3	329	32.6	11.55	64.10	6	682	67.4	35.90	88.45
Bumiputera Sabah	604	80639	44.8	38.27	51.45	783	99479	55.2	48.55	61.73
Bumiputera Sarawak	13	1969	45.5	24.16	68.63	19	2359	54.5	31.37	75.84
Others	92	13564	44.9	31.82	58.73	123	16645	55.1	41.27	68.18
School Category										
Primary	417	73426	60.5	55.33	65.46	270	47933	39.5	34.54	44.67
Secondary	571	66784	35.9	32.84	39.15	1002	119069	64.1	60.85	67.16
BMI-for-age status (BAZ)										
Thinness (<-2sd)	41	5730	32.7	24.19	42.59	86	11775	67.3	57.41	75.81
Normal (≥-2sd - ≤+1sd)	712	100394	46.4	40.76	52.13	881	115975	53.6	47.87	59.24
Overweight (>+1sd - ≤+2sd)	139	20165	46.7	36.25	57.36	181	23054	53.3	42.64	63.75
Obese (>+2sd)	92	13540	45.8	33.95	58.19	122	16009	54.2	41.81	66.05
Height-for-age status (HAZ)										
Stunting (<-2sd)	115	15782	43.9	36.55	51.51	158	20174	56.1	48.49	63.45
Normal (≥-2sd)	869	124046	45.8	39.31	52.49	1112	146639	54.2	47.51	60.69

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	2014	82.5	79.93	84.76
Jogging/Running	1939	80.5	78.21	82.60
Tagging	1610	68.2	62.36	73.51
Badminton	1587	67.8	60.52	74.37
Cycling	1229	52.9	46.81	58.94

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
SABAH	529	71216	21.6	18.53	25.12	1306	174174	52.9	48.85	56.98
Locality of school										
Urban	206	29379	19.0	16.42	21.91	564	81574	52.8	48.44	57.11
Rural	323	41836	24.0	19.11	29.62	742	92600	53.1	46.40	59.61
Sex										
Boys	274	38494	23.2	19.60	27.32	609	80558	48.6	43.39	53.90
Girls	255	32722	20.0	16.67	23.86	697	93616	57.3	52.81	61.68
Class										
Standard 4	53	11166	25.9	20.69	31.81	86	17659	40.9	33.70	48.51
Standard 5	31	6733	15.5	9.62	23.90	118	22899	52.6	43.59	61.39
Standard 6	81	11109	25.2	11.39	46.85	144	20288	46.0	33.47	59.06
Form 1	66	7325	17.2	11.49	24.99	213	24580	57.8	50.80	64.45
Form 2	78	9082	22.5	15.94	30.79	196	22499	55.8	50.00	61.36
Form 3	70	8316	20.6	15.18	27.40	196	23796	59.0	54.65	63.28
Form 4	54	8236	21.5	13.35	32.79	151	22121	57.8	46.68	68.18
Form 5	96	9249	25.2	17.21	35.30	202	20333	55.4	44.70	65.58
Ethnicity										
Malay	100	13434	29.9	23.21	37.60	168	21882	48.7	43.01	54.46
Chinese	75	11460	21.1	17.81	24.92	170	27177	50.1	46.40	53.89
Indian	6	683	56.3	27.46	81.40	2	225	18.6	4.82	50.62
Bumiputera Sabah	289	37434	19.6	16.02	23.67	811	103764	54.2	49.16	59.24
Bumiputera Sarawak	12	1605	33.2	20.60	48.88	15	2034	42.1	29.05	56.41
Others	47	6600	20.3	13.84	28.66	140	19092	58.6	49.34	67.29
School level										
Primary	165	29008	22.2	16.38	29.29	348	60845	46.5	40.90	52.20
Secondary	364	42208	21.3	18.10	24.89	958	113328	57.2	53.19	61.08
BMI-for-age status (BAZ)										
Thinness (<-2sd)	29	3699	19.3	12.34	28.80	80	11124	57.9	47.56	67.66
Normal (≥-2sd - ≤+1sd)	372	49758	21.6	18.00	25.71	894	119059	51.7	47.50	55.90
Overweight (>+1sd - ≤+2sd)	70	9527	20.5	17.03	24.37	200	26632	57.2	51.28	62.89
Obese (>+2sd)	56	8053	24.8	19.14	31.53	130	17169	52.9	45.42	60.29
Height-for-age status (HAZ)										
Stunting (<-2sd)	69	8964	22.8	18.29	28.12	156	19839	50.5	43.52	57.53
Normal (≥-2sd)	458	62074	21.5	18.18	25.15	1148	154146	53.3	49.15	57.41

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
SABAH	587	83638	25.4	22.49	28.59
Locality of school					
Urban	289	43562	28.2	23.90	32.92
Rural	298	40076	23.0	19.62	26.69
Sex					
Boys	328	46598	28.1	24.34	32.26
Girls	259	37039	22.7	19.14	26.64
Class					
Standard 4	71	14350	33.2	27.94	39.00
Standard 5	67	13924	32.0	26.93	37.47
Standard 6	91	12707	28.8	20.67	38.60
Form 1	91	10638	25.0	20.95	29.56
Form 2	77	8773	21.7	15.89	28.99
Form 3	66	8197	20.3	16.67	24.57
Form 4	54	7917	20.7	16.45	25.67
Form 5	70	7133	19.4	14.63	25.34
Ethnicity					
Malay	70	9596	21.4	16.19	27.65
Chinese	90	15558	28.7	23.38	34.70
Indian	3	305	25.2	6.73	61.05
Bumiputera Sabah	371	50101	26.2	22.90	29.77
Bumiputera Sarawak	9	1189	24.6	13.91	39.81
Others	44	6888	21.1	15.27	28.52
School level					
Primary	229	40981	31.3	27.47	35.45
Secondary	358	42657	21.5	19.32	23.90
BMI-for-age status (BAZ)					
Thinness (<-2sd)	30	4377	22.8	16.97	29.90
Normal (≥-2sd - ≤+1sd)	431	61420	26.7	23.38	30.25
Overweight (>+1sd - ≤+2sd)	75	10417	22.4	17.49	28.14
Obese (>+2sd)	49	7221	22.3	17.33	28.11
Height-for-age status (HAZ)					
Stunting (<-2sd)	74	10453	26.6	21.69	32.22
Normal (≥-2sd)	511	72981	25.2	22.15	28.60

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	1380	190303	57.8	53.40	62.11	1042	138837	42.2	37.89	46.60
Locality of school										
Urban	565	84378	54.6	47.42	61.64	494	70097	45.4	38.36	52.58
Rural	815	105925	60.6	55.90	65.20	548	68740	39.4	34.80	44.10
Sex										
Boys	675	93109	56.3	51.13	61.28	534	72360	43.7	38.72	48.87
Girls	705	97194	59.4	53.76	64.77	508	66477	40.6	35.23	46.24
Class										
Standard 4	115	23594	54.4	48.70	60.01	96	19771	45.6	39.99	51.30
Standard 5	144	29152	66.9	58.82	74.14	72	14406	33.1	25.86	41.18
Standard 6	173	23809	53.9	46.77	60.78	144	20404	46.1	39.22	53.23
Form 1	252	29284	69.0	61.58	75.49	117	13182	31.0	24.51	38.42
Form 2	203	23669	58.8	51.79	65.54	147	16560	41.2	34.46	48.21
Form 3	176	21579	53.2	43.24	62.93	158	18973	46.8	37.07	56.76
Form 4	153	22674	59.2	50.00	67.88	106	15599	40.8	32.12	50.00
Form 5	164	16542	45.3	36.65	54.33	202	19941	54.7	45.67	63.35
Ethnicity										
Malay	207	27750	61.9	55.18	68.24	130	17062	38.1	31.76	44.82
Chinese	151	26233	48.6	41.24	55.94	183	27787	51.4	44.06	58.76
Indian	5	553	45.6	17.15	77.21	6	660	54.4	22.79	82.85
Bumiputera Sabah	859	113218	59.1	53.11	64.81	614	78381	40.9	35.19	46.89
Bumiputera Sarawak	17	2309	49.2	37.15	61.26	18	2388	50.8	38.74	62.85
Others	141	20240	61.7	56.73	66.46	91	12559	38.3	33.54	43.27
School level										
Primary	432	76554	58.4	53.01	63.55	312	54581	41.6	36.45	46.99
Secondary	948	113749	57.4	51.00	63.65	730	84256	42.6	36.35	49.00
BMI-for-age status (BAZ)										
Thinness (<-2sd)	93	13337	69.2	61.12	76.25	46	5938	30.8	23.75	38.88
Normal (\geq -2sd - \leq +1sd)	967	132006	57.3	52.77	61.72	731	98361	42.7	38.28	47.23
Overweight (>+1sd - \leq +2sd)	195	26592	57.1	48.44	65.32	150	19990	42.9	34.68	51.56
Obese (>+2sd)	123	18191	56.2	47.56	64.55	111	14156	43.8	35.45	52.44
Height-for-age status (HAZ)										
Stunting (<-2sd)	178	22798	57.8	51.35	63.99	122	16647	42.2	36.01	48.65
Normal (\geq -2sd)	1200	167327	57.9	53.17	62.44	916	121797	42.1	37.56	46.83

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	1380	190303	57.8	53.40	62.11	1042	138837	42.2	37.89	46.60
Locality of school										
Urban	565	84378	54.6	47.42	61.64	494	70097	45.4	38.36	52.58
Rural	815	105925	60.6	55.90	65.20	548	68740	39.4	34.80	44.10
Sex										
Boys	675	93109	56.3	51.13	61.28	534	72360	43.7	38.72	48.87
Girls	705	97194	59.4	53.76	64.77	508	66477	40.6	35.23	46.24
Class										
Standard 4	115	23594	54.4	48.70	60.01	96	19771	45.6	39.99	51.30
Standard 5	144	29152	66.9	58.82	74.14	72	14406	33.1	25.86	41.18
Standard 6	173	23809	53.9	46.77	60.78	144	20404	46.1	39.22	53.23
Form 1	252	29284	69.0	61.58	75.49	117	13182	31.0	24.51	38.42
Form 2	203	23669	58.8	51.79	65.54	147	16560	41.2	34.46	48.21
Form 3	176	21579	53.2	43.24	62.93	158	18973	46.8	37.07	56.76
Form 4	153	22674	59.2	50.00	67.88	106	15599	40.8	32.12	50.00
Form 5	164	16542	45.3	36.65	54.33	202	19941	54.7	45.67	63.35
Ethnicity										
Malay	207	27750	61.9	55.18	68.24	130	17062	38.1	31.76	44.82
Chinese	151	26233	48.6	41.24	55.94	183	27787	51.4	44.06	58.76
Indian	5	553	45.6	17.15	77.21	6	660	54.4	22.79	82.85
Bumiputera Sabah	859	113218	59.1	53.11	64.81	614	78381	40.9	35.19	46.89
Bumiputera Sarawak	17	2309	49.2	37.15	61.26	18	2388	50.8	38.74	62.85
Others	141	20240	61.7	56.73	66.46	91	12559	38.3	33.54	43.27
School level										
Primary	432	76554	58.4	53.01	63.55	312	54581	41.6	36.45	46.99
Secondary	948	113749	57.4	51.00	63.65	730	84256	42.6	36.35	49.00
BMI-for-age status (BAZ)										
Thinness (<-2sd)	93	13337	69.2	61.12	76.25	46	5938	30.8	23.75	38.88
Normal (≥-2sd - ≤+1sd)	967	132006	57.3	52.77	61.72	731	98361	42.7	38.28	47.23
Overweight (>+1sd - ≤+2sd)	195	26592	57.1	48.44	65.32	150	19990	42.9	34.68	51.56
Obese (>+2sd)	123	18191	56.2	47.56	64.55	111	14156	43.8	35.45	52.44
Height-for-age status (HAZ)										
Stunting (<-2sd)	178	22798	57.8	51.35	63.99	122	16647	42.2	36.01	48.65
Normal (≥-2sd)	1200	167327	57.9	53.17	62.44	916	121797	42.1	37.56	46.83

3.6. Supplements intake among adolescents (Primary 4 to Secondary 5) in Sabah

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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 consumed vitamin/mineral supplements.
- To determine the most commonly consumed 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 adolescents in Sabah was 47.8% (95% CI: 41.18, 54.43) (**Table 3.6.1**) and 31.5% (95% CI: 27.07, 36.29) (**Table 3.6.5**). In average, the vitamin/mineral and food supplements were consumed everyday by 17.6% (95% CI 14.08, 21.66) and 12.3% (95% CI 9.56, 15.80) of adolescents (**Table 3.6.4, Table 3.6.8**). The most commonly consumed vitamin / minerals and food supplements were Vitamin C 36.1% (95% CI: 30.81-41.69) (**Table 3.6.2**) and bee product 11.4% (95% CI: 9.12, 14.10) (**Table 3.6.6**). The main reason for taking vitamin / minerals and food supplements was due to parent's advised 41.9 % (95% CI: 36.8, 47.1) (**Table 3.6.3**) and 26.4% (95% CI: 22.9, 30.1) (**Table 3.6.7**).

3.6.4 Discussions

The prevalence of taking vitamin/minerals and food supplements among adolescence in Sabah was higher than 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 these findings were consistent with national findings. Finding from the survey showed that parent's advice was the main and significant reason for taking vitamin/mineral and food supplements among adolescents; i.e. parents were strong influencer for food supplement and vitamin intake of adolescents.

3.6.5 Conclusions

Overall findings from this survey showed that almost half and one third of adolescents in Sabah consumed vitamin/mineral and food supplements respectively. A quarter and one third of parents influenced their children's intake of vitamin/ mineral and food supplements respectively. Vitamin C and Bee product remained the main type of vitamin and food supplement consumed by adolescents in Sabah.

3.6.6 Recommendation

Advocating adolescents to eat balanced 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.

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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
Sabah	1096	157967	47.8	41.18	54.43	1337	172766	52.2	45.57	58.82
Locality of School										
Urban	534	82195	52.9	44.22	61.41	531	73171	47.1	38.59	55.78
Rural	562	75772	43.2	34.49	52.37	806	99595	56.8	47.63	65.51
Sex										
Boys	600	85630	51.4	45.52	57.29	617	80880	48.6	42.71	54.48
Girls	496	72337	44.0	36.20	52.21	720	91886	56.0	47.79	63.80
Class										
Standard 4	149	30439	69.0	60.65	76.25	66	13685	31.0	23.75	39.35
Standard 5	140	28308	64.7	56.20	72.34	77	15453	35.3	27.66	43.80
Standard 6	178	24546	55.5	49.27	61.59	139	19667	44.5	38.41	50.73
Remove class										
Form 1	188	21423	50.2	40.48	59.95	183	21230	49.8	40.05	59.52
Form 2	154	18147	45.0	35.91	54.42	197	22188	55.0	45.58	64.09
Form 3	99	12197	30.0	23.98	36.80	236	28461	70.0	63.20	76.02
Form 4	83	12349	32.3	21.49	45.32	176	25925	67.7	54.68	78.51
Form 5	105	10558	28.8	24.04	33.98	263	26157	71.2	66.02	75.96
Ethnicity										
Malay	182	24633	54.5	44.13	64.49	158	20565	45.5	35.51	55.87
Chinese	187	32016	58.9	53.12	64.53	149	22298	41.1	35.47	46.88
Indian	5	515	42.4	17.15	72.39	6	699	57.6	27.61	82.85
Bumiputera Sabah	594	81510	42.4	35.32	49.89	882	110567	57.6	50.11	64.68
Bumiputera Sarawak	14	2146	44.5	23.11	68.06	22	2682	55.5	31.94	76.89
Others	114	17148	51.8	41.76	61.70	120	15955	48.2	38.30	58.24
BMI-for age status (BAZ)										
Thinness (<-2sd)	83	11904	60.8	48.13	72.13	58	7682	39.2	27.87	51.87
Normal (≥-2sd - ≤+1sd)	780	112732	48.7	41.96	55.54	924	118615	51.3	44.46	58.04
Overweight (>+1sd - ≤+2sd)	138	19226	41.1	33.20	49.47	209	27562	58.9	50.53	66.80
Obese (>+2sd)	95	14106	43.5	34.03	53.43	140	18337	56.5	46.57	65.97
Height-for-age status (HAZ)										
Stunting (<-2sd)	120	16516	41.9	32.61	51.74	180	22929	58.1	48.26	67.39
Normal (≥-2sd)	976	141451	48.7	42.12	55.24	1151	149266	51.3	44.76	57.88

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
Sabah	148	21230	6.4	5.03	8.21	825	118956	36.1	30.81	41.69
Locality of School										
Urban	90	13546	8.8	6.82	11.17	402	61956	40.1	32.25	48.40
Rural	58	7684	4.4	3.19	6.02	423	57000	32.6	26.33	39.46
Sex										
Boys	90	13546	8.8	6.82	11.17	402	61956	40.1	32.25	48.40
Girls	58	7684	4.4	3.19	6.02	423	57000	32.6	26.33	39.46
Class										
Standard 4	16	3742	8.5	4.81	14.53	118	23734	53.8	45.81	61.58
Standard 5	16	3321	7.6	5.67	10.08	109	21924	50.1	42.09	58.10
Standard 6	26	3481	7.9	5.20	11.94	126	17208	39.2	33.99	44.76
Remove class										
Form 1	26	2917	6.8	3.39	13.30	134	15275	35.8	29.94	42.14
Form 2	16	1829	4.5	2.58	7.84	132	15664	38.8	29.99	48.48
Form 3	19	2347	5.8	3.78	8.78	81	10046	24.8	17.79	33.42
Form 4	11	1742	4.6	1.42	13.97	56	8232	21.8	15.41	29.84
Form 5	18	1852	5.0	2.72	9.17	69	6873	18.7	14.44	23.91
Ethnicity										
Malay	19	2424	5.4	3.06	9.22	138	18559	41.1	31.36	51.51
Chinese	30	5120	9.5	6.30	14.05	145	24675	45.7	37.99	53.70
Indian						3	312	25.7	9.68	52.79
Bumiputera Sabah	83	11376	5.9	4.26	8.24	445	61122	31.9	26.33	38.09
Bumiputera Sarawak	4	522	10.8	3.65	27.97	10	1488	30.8	14.99	52.97
Others	12	1788	5.4	3.51	8.22	84	12800	38.7	30.82	47.15
BMI-for age status (BAZ)										
Thinness (<-2sd)	13	1772	9.0	5.51	14.51	56	7990	40.8	30.61	51.84
Normal (≥ - 2sd - ≤+ 1sd)	107	15743	6.8	5.21	8.86	591	84753	36.7	31.57	42.09
Overweight (> +1sd - ≤+ 2sd)	17	2059	4.5	2.70	7.32	111	15800	34.3	27.07	42.37
Obese (> + 2sd)	11	1656	5.1	2.51	10.10	67	10413	32.1	23.67	41.87
Height-for - age status (HAZ)										
Stunting (<-2sd)	15	2038	5.2	3.05	8.61	93	12448	31.6	24.83	39.16
Normal (≥-2sd)	133	19192	6.6	5.11	8.54	732	106508	36.8	31.23	42.66

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
Sabah	83	12257	3.7	2.93	4.71	129	16833	5.1	4.25	6.12
Locality of School										
Urban	37	5766	3.7	2.59	5.33	51	7013	4.5	3.43	5.97
Rural	46	6491	3.7	2.70	5.07	78	9821	5.6	4.46	7.03
Sex										
Boys	37	5766	3.7	2.59	5.33	51	7013	4.5	3.43	5.97
Girls	46	6491	3.7	2.70	5.07	78	9821	5.6	4.46	7.03
Class										
Standard 4	15	2985	6.8	4.52	10.00	8	1575	3.6	1.95	6.43
Standard 5	11	2234	5.1	3.13	8.21	10	2008	4.6	1.89	10.73
Standard 6	11	1529	3.5	1.87	6.41	23	3168	7.2	4.58	11.22
Remove class										
Form 1	16	1768	4.1	2.03	8.30	20	2227	5.2	2.92	9.17
Form 2	8	879	2.2	0.96	4.87	18	1950	4.8	2.49	9.17
Form 3	6	732	1.8	0.81	3.98	15	1862	4.6	2.77	7.53
Form 4	9	1416	3.7	1.36	9.92	10	1402	3.7	2.04	6.66
Form 5	7	714	1.9	0.86	4.35	25	2643	7.2	3.83	13.12
Ethnicity										
Malay	18	2589	5.7	3.47	9.32	24	2948	6.5	4.15	10.10
Chinese	9	1639	3.0	1.70	5.37	13	1948	3.6	2.19	5.89
Indian						1	91	7.5	0.99	39.67
Bumiputera Sabah	46	6517	3.4	2.31	4.99	70	8853	4.6	3.63	5.87
Bumiputera Sarawak	1	118	2.4	0.26	19.24	2	342	7.1	2.13	21.03
Others	9	1394	4.2	1.83	9.37	19	2651	8.0	5.79	10.98
BMI-for age status (BAZ)										
Thinness (<-2sd)	9	1259	6.4	3.95	10.28	9	1266	6.5	3.58	11.40
Normal ($\geq -2sd - \leq +1sd$)	50	7867	3.4	2.57	4.50	97	12928	5.6	4.65	6.71
Overweight (> +1sd - $\leq +2sd$)	12	1714	3.7	1.86	7.33	14	1542	3.3	1.96	5.67
Obese (> +2sd)	12	1417	4.4	1.99	9.30	9	1097	3.4	1.85	6.12
Height-for - age status (HAZ)										
Stunting (<-2sd)	13	1856	4.7	2.19	9.83	11	1694	4.3	1.88	9.53
Normal ($\geq -2sd$)	70	10401	3.6	2.82	4.57	118	15139	5.2	4.31	6.33

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
Sabah	229	32750	20.8	16.80	25.41	458	66041	41.9	36.83	47.14
Locality of School										
Urban	100	15133	18.5	11.99	27.35	255	39136	47.7	40.32	55.27
Rural	129	17617	23.3	20.76	26.01	203	26906	35.6	31.91	39.39
Sex										
Boys	124	17649	20.6	15.96	26.26	232	33084	38.7	32.56	45.19
Girls	105	15101	20.9	16.57	26.10	226	32957	45.7	41.17	50.30
Class										
Standard 4	37	7107	23.3	14.86	34.71	56	11567	38.0	27.55	49.69
Standard 5	25	4956	17.5	9.92	29.02	52	10576	37.4	27.31	48.64
Standard 6	33	4400	18.0	14.23	22.56	91	12900	52.8	42.95	62.51
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	46	5305	24.9	19.71	30.90	79	8928	41.9	34.88	49.22
Form 2	34	4141	22.9	15.96	31.80	62	7261	40.2	35.16	45.48
Form 3	20	2486	20.4	10.80	35.11	45	5542	45.4	32.96	58.51
Form 4	19	2879	23.3	11.17	42.38	38	5901	47.8	30.69	65.41
Form 5	15	1476	14.0	8.65	21.82	35	3366	31.9	23.40	41.77
Ethnicity										
Malay	47	6523	26.5	20.55	33.40	78	10223	41.5	32.88	50.68
Chinese	22	3264	10.2	4.13	23.20	91	16266	51.0	38.99	62.93
Indian	2	223	52.4	11.52	90.28	-	-	-	-	-
Bumiputera Sabah	128	18030	22.1	17.93	27.04	238	32248	39.6	34.14	45.36
Bumiputera Sarawak	1	176	8.2	1.88	29.39	6	880	41.0	19.91	66.06
Others	29	4535	26.4	21.52	32.04	45	6423	37.5	28.26	47.66
BMI-for age status (BAZ)										
Thinness (<-2sd)	22	3164	26.8	14.97	43.27	29	4015	34.0	23.65	46.21
Normal ($\geq -2sd - \leq +1sd$)	167	23750	21.1	17.13	25.67	339	49478	43.9	38.99	48.98
Overweight ($> +1sd - \leq +2sd$)	22	3256	17.1	10.45	26.59	58	7939	41.6	32.10	51.72
Obese ($> +2sd$)	18	2580	18.3	11.72	27.40	32	4609	32.7	21.50	46.23
Height-for - age status (HAZ)										
Stunting (<-2sd)	33	4335	26.4	18.23	36.64	42	5883	35.9	28.08	44.45
Normal ($\geq -2sd$)	196	28415	20.1	15.79	25.27	416	60158	42.6	36.97	48.42

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	276	39761	25.2	22.04	28.69	35	5143	3.3	2.42	4.39
Locality of School										
Urban	119	18263	22.3	18.60	26.44	14	2320	2.8	1.89	4.22
Rural	157	21498	28.4	24.49	32.69	21	2823	3.7	2.45	5.65
Sex										
Boys	167	23928	28.0	24.00	32.34	26	3520	4.1	2.75	6.13
Girls	109	15832	22.0	18.20	26.23	9	1623	2.2	1.09	4.60
Class										
Standard 4	39	8159	26.8	19.33	35.88	4	806	2.6	0.88	7.72
Standard 5	40	8227	29.1	21.24	38.35	5	965	3.4	1.87	6.14
Standard 6	33	4343	17.8	11.78	25.96	10	1531	6.3	3.34	11.47
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	40	4605	21.6	13.64	32.47	6	629	2.9	1.30	6.56
Form 2	43	5063	28.0	21.40	35.80	5	591	3.3	1.17	8.85
Form 3	24	2887	23.7	16.32	33.02	1	112	0.9	0.11	6.99
Form 4	18	2450	19.8	10.00	35.53	2	320	2.6	0.86	7.52
Form 5	39	4028	38.2	28.40	48.96	2	189	1.8	0.27	11.06
Ethnicity										
Malay	44	6222	25.3	18.62	33.30	2	281	1.1	0.24	5.17
Chinese	46	7730	24.2	21.34	27.41	11	1780	5.6	4.13	7.51
Indian	2	202	47.6	9.72	88.48	-	-	-	-	-
Bumiputera Sabah	154	21118	25.9	21.16	31.38	20	2736	3.4	1.99	5.62
Bumiputera Sarawak	5	778	36.3	16.04	62.89	-	-	-	-	-
Others	25	3709	21.6	14.75	30.56	2	345	2.0	0.58	6.75
BMI-for age status (BAZ)										
Thinness (<-2sd)	20	2862	24.3	17.39	32.76	1	90	0.8	0.09	5.92
Normal (≥ - 2sd - ≤+ 1sd)	187	27017	24.0	20.83	27.45	27	4047	3.6	2.53	5.08
Overweight (> +1sd - ≤+ 2sd)	43	5941	31.1	25.33	37.55	3	502	2.6	0.97	6.96
Obese (> + 2sd)	26	3941	27.9	17.97	40.69	4	503	3.6	1.45	8.50
Height-for - age status (HAZ)										
Stunting (<-2sd)	30	4200	25.6	17.04	36.54	4	549	3.3	1.43	7.63
Normal (≥-2sd)	246	35561	25.2	22.00	28.65	31	4594	3.3	2.33	4.52

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
Sabah	71	10466	6.6	5.10	8.60
Locality of School					
Urban	34	5632	6.9	4.71	9.91
Rural	37	4834	6.4	4.48	9.03
Sex					
Boys	36	5428	6.3	4.04	9.83
Girls	35	5038	7.0	5.23	9.28
Class					
Standard 4	8	1874	6.2	2.49	14.43
Standard 5	14	2867	10.1	5.83	17.01
Standard 6	9	1102	4.5	1.35	14.03
Remove class	-	-	-	-	-
Form 1	10	1160	5.4	3.07	9.46
Form 2	8	862	4.8	2.16	10.22
Form 3	4	529	4.3	1.23	14.19
Form 4	5	684	5.5	1.44	19.04
Form 5	13	1390	13.2	6.50	24.82
Ethnicity					
Malay	5	562	2.3	0.83	6.15
Chinese	16	2843	8.9	6.53	12.07
Indian	-	-	-	-	-
Bumiputera Sabah	38	5068	6.2	3.91	9.77
Bumiputera Sarawak	1	118	5.5	0.52	39.22
Others	11	1875	10.9	6.27	18.40
BMI-for age status (BAZ)					
Thinness (<-2sd)	6	1064	9.0	4.78	16.37
Normal ($\geq -2sd - \leq +1sd$)	48	6759	6.0	4.51	7.95
Overweight ($> +1sd - \leq +2sd$)	8	1052	5.5	2.61	11.26
Obese ($> +2sd$)	9	1592	11.3	5.74	20.98
Height-for - age status (HAZ)					
Stunting (<-2sd)	9	1338	8.2	4.56	14.16
Normal ($\geq -2sd$)	62	9128	6.5	4.76	8.72

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
Sabah	390	57931	17.6	14.08	21.66	182	26101	7.9	6.37	9.78
Locality of School										
Urban	210	33028	21.3	16.48	27.10	93	14123	9.1	7.09	11.65
Rural	180	24903	14.2	10.34	19.24	89	11978	6.8	4.87	9.53
Sex										
Boys	190	28464	17.1	13.48	21.53	117	16552	10.0	7.99	12.35
Girls	200	29467	18.0	13.93	22.89	65	9549	5.8	4.09	8.23
Class										
Standard 4	63	12828	29.1	22.92	36.10	29	5797	13.1	10.78	15.92
Standard 5	58	11819	27.0	18.95	36.93	24	4815	11.0	7.19	16.49
Standard 6	69	9435	21.3	17.21	26.14	22	2741	6.2	3.99	9.50
Remove class										
Form 1	50	5943	13.9	10.41	18.41	38	4218	9.9	6.24	15.32
Form 2	54	6530	16.2	11.43	22.56	22	2569	6.4	4.18	9.65
Form 3	37	4537	11.2	6.44	18.77	19	2423	6.0	3.64	9.67
Form 4	19	2943	7.7	4.75	12.40	13	2048	5.4	2.49	11.29
Form 5	40	3896	10.6	7.65	14.62	15	1489	4.1	1.97	8.21
Ethnicity										
Malay	65	9280	20.5	14.71	27.91	36	4687	10.4	6.82	15.47
Chinese	79	13607	25.1	20.44	30.31	34	5495	10.1	6.76	14.88
Indian	1	90	7.4	0.98	39.24	1	112	9.2	1.03	49.63
Bumiputera Sabah	196	27623	14.4	10.82	18.95	94	13159	6.9	4.95	9.45
Bumiputera Sarawak	7	943	19.5	6.17	47.25	1	100	2.1	0.28	13.97
Others	42	6388	19.4	13.79	26.66	16	2549	7.8	3.99	14.52
BMI-for age status (BAZ)										
Thinness (<-2sd)	24	3418	17.5	10.56	27.47	17	2302	11.8	6.80	19.57
Normal (≥ - 2sd - ≤+ 1sd)	280	42109	18.2	14.46	22.69	122	17531	7.6	5.79	9.87
Overweight (> +1sd - ≤+ 2sd)	52	7186	15.5	12.14	19.62	23	3373	7.3	3.57	14.27
Obese (> + 2sd)	34	5218	16.1	10.16	24.51	20	2894	8.9	5.33	14.55
Height-for - age status (HAZ)										
Stunting (<-2sd)	48	6585	16.8	11.54	23.78	20	2812	7.2	4.23	11.90
Normal (≥-2sd)	342	51346	17.7	14.20	21.82	162	23289	8.0	6.45	9.94

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
Sabah	206	28625	8.7	7.30	10.27	364	50990	15.4	13.66	17.42
Locality of School										
Urban	104	15160	9.8	7.91	12.04	163	24785	16.0	13.38	19.01
Rural	102	13465	7.7	5.96	9.86	201	26205	15.0	12.65	17.61
Sex										
Boys	122	16921	10.2	8.28	12.47	200	27702	16.7	14.37	19.26
Girls	84	11704	7.1	5.41	9.37	164	23287	14.2	11.43	17.52
Class										
Standard 4	21	4092	9.3	6.00	14.06	37	7879	17.9	12.59	24.71
Standard 5	20	4130	9.4	6.19	14.13	42	8341	19.1	12.72	27.56
Standard 6	46	6337	14.3	11.82	17.28	47	6731	15.2	10.49	21.59
Remove class										
Form 1	35	3851	9.0	5.86	13.66	68	7652	17.9	13.11	24.06
Form 2	36	4151	10.3	7.55	13.96	54	6262	15.6	10.59	22.31
Form 3	17	2077	5.1	3.40	7.65	38	4687	11.6	8.59	15.40
Form 4	18	2630	6.9	3.95	11.85	32	4632	12.2	8.58	17.06
Form 5	13	1357	3.7	2.18	6.23	46	4804	13.1	10.00	17.04
Ethnicity										
Malay	38	4889	10.8	7.77	14.86	45	5905	13.1	10.45	16.22
Chinese	24	3779	7.0	4.29	11.09	60	10704	19.7	16.49	23.38
Indian	2	202	16.6	3.85	49.88	1	111	9.2	1.36	42.57
Bumiputera Sabah	117	16157	8.4	6.37	11.07	213	27650	14.4	12.73	16.31
Bumiputera Sarawak	1	176	3.6	0.65	17.97	7	1058	21.9	7.52	49.19
Others	24	3422	10.4	6.35	16.60	38	5562	16.9	12.59	22.35
BMI-for age status (BAZ)										
Thinness (<-2sd)	16	2365	12.1	7.01	20.00	24	3555	18.2	13.43	24.08
Normal ($\geq -2sd - \leq +1sd$)	152	21324	9.2	7.51	11.28	259	35929	15.5	13.64	17.66
Overweight ($> +1sd - \leq +2sd$)	26	3398	7.3	5.01	10.62	52	7166	15.5	11.91	19.87
Obese ($> +2sd$)	12	1538	4.7	2.67	8.29	29	4340	13.4	8.74	19.93
Height-for - age status (HAZ)										
Stunting (<-2sd)	26	3686	9.4	5.68	15.16	36	4666	11.9	7.61	18.13
Normal ($\geq -2sd$)	180	24939	8.6	7.28	10.11	328	46323	16.0	14.02	18.11

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
Sabah	724	104120	31.5	27.07	36.29	1708	226426	68.5	63.71	72.93
Locality of School										
Urban	364	55104	35.5	30.38	41.00	700	100081	64.5	59.00	69.62
Rural	360	49016	28.0	21.89	34.95	1008	126345	72.0	65.05	78.11
Sex										
Boys	412	59224	35.6	30.43	41.12	804	107155	64.4	58.88	69.57
Girls	312	44897	27.3	22.73	32.51	904	119271	72.7	67.49	77.27
Class										
Standard 4	98	20540	46.6	39.59	53.65	117	23584	53.4	46.35	60.41
Standard 5	83	16857	38.7	34.46	43.08	133	26724	61.3	56.92	65.54
Standard 6	121	16441	37.2	33.07	41.50	196	27772	62.8	58.50	66.93
Remove class										
Form 1	135	15472	36.3	29.91	43.16	236	27182	63.7	56.84	70.09
Form 2	95	11216	27.7	19.64	37.57	257	29244	72.3	62.43	80.36
Form 3	69	8474	20.8	13.81	30.21	266	32184	79.2	69.79	86.19
Form 4	53	8061	21.1	13.96	30.49	206	30212	78.9	69.51	86.04
Form 5	70	7059	19.3	14.31	25.50	297	29525	80.7	74.50	85.69
Ethnicity										
Malay	121	16516	36.5	28.17	45.81	219	28682	63.5	54.19	71.83
Chinese	126	20903	38.5	35.60	41.46	210	33410	61.5	58.54	64.40
Indian	3	314	25.9	9.75	53.03	8	899	74.1	46.97	90.25
Bumiputera Sabah	375	51612	26.9	22.00	32.33	1102	140590	73.1	67.67	78.00
Bumiputera Sarawak	11	1668	35.5	19.67	55.34	24	3029	64.5	44.66	80.33
Others	88	13107	39.8	31.36	48.92	145	19816	60.2	51.08	68.64
BMI-for age status (BAZ)										
Thinness (<-2sd)	52	7411	38.1	30.16	46.72	88	12044	61.9	53.28	69.84
Normal (≥ - 2sd - ≤+ 1sd)	506	73309	31.7	26.86	36.97	1198	157982	68.3	63.03	73.14
Overweight (> +1sd - ≤+ 2sd)	99	13599	29.1	23.57	35.25	248	33189	70.9	64.75	76.43
Obese (> + 2sd)	67	9801	30.2	25.10	35.87	168	22641	69.8	64.13	74.90
Height-for - age status (HAZ)										
Stunting (<-2sd)	78	10616	26.9	20.47	34.51	222	28829	73.1	65.49	79.53
Normal (≥-2sd)	646	93504	32.2	27.84	36.86	1480	197027	67.8	63.14	72.16

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
Sabah	137	19281	5.9	4.40	7.76	189	27951	8.5	6.99	10.29
Locality of School										
Urban	81	11905	7.7	5.35	11.03	101	15759	10.2	8.58	12.14
Rural	56	7376	4.2	3.17	5.60	88	12192	7.0	5.02	9.62
Sex										
Boys	69	9620	5.8	4.17	8.05	117	17022	10.3	8.24	12.77
Girls	68	9662	5.9	4.12	8.43	72	10929	6.7	4.98	8.94
Class										
Standard 4	20	3844	8.8	4.57	16.25	26	5222	11.9	10.20	13.96
Standard 5	13	2386	5.5	3.09	9.52	21	4711	10.8	6.80	16.76
Standard 6	24	3298	7.5	4.52	12.14	25	3495	7.9	6.02	10.38
Remove class										
Form 1	21	2492	5.8	3.20	10.44	30	3226	7.6	3.57	15.32
Form 2	21	2522	6.3	3.60	10.75	24	2958	7.4	3.32	15.57
Form 3	13	1612	4.0	1.97	8.00	28	3679	9.2	5.25	15.51
Form 4	10	1634	4.3	1.53	11.46	18	2895	7.6	3.04	17.75
Form 5	15	1495	4.1	2.02	8.13	17	1766	4.8	2.86	8.07
Ethnicity										
Malay	30	4146	9.2	5.80	14.22	27	3682	8.1	5.22	12.50
Chinese	10	1599	3.0	1.52	5.73	45	7625	14.2	11.98	16.65
Indian	1	90	7.4	0.98	39.24	1	91	7.5	0.99	39.67
Bumiputera Sabah	76	10434	5.5	3.94	7.54	91	12656	6.6	4.73	9.22
Bumiputera Sarawak	6	768	15.9	7.61	30.27	5	705	14.6	5.87	31.93
Others	14	2244	6.8	3.15	14.15	20	3193	9.7	6.86	13.56
BMI-for age status (BAZ)										
Thinness (<-2sd)	7	987	5.1	1.72	14.03	21	2841	14.6	9.21	22.36
Normal (≥ -2sd - ≤+ 1sd)	100	14454	6.3	4.50	8.68	126	19211	8.3	6.55	10.57
Overweight (> +1sd - ≤+ 2sd)	20	2591	5.6	3.74	8.37	24	3338	7.2	3.66	13.83
Obese (> + 2sd)	10	1249	3.9	1.70	8.54	18	2561	7.9	5.08	12.13
Height-for - age status (HAZ)										
Stunting (<-2sd)	12	1572	4.0	1.82	8.55	28	3634	9.2	5.35	15.50
Normal (≥-2sd)	125	17710	6.1	4.59	8.13	161	24317	8.4	6.80	10.37

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
Sabah	268	37403	11.4	9.12	14.10	111	16195	4.9	3.86	6.26
Locality of School										
Urban	121	17410	11.3	7.82	16.06	58	8616	5.6	4.07	7.63
Rural	147	19993	11.4	8.78	14.78	53	7580	4.3	3.02	6.18
Sex										
Boys	152	21074	12.7	10.33	15.59	68	9931	6.0	4.43	8.07
Girls	116	16330	10.0	7.34	13.47	43	6265	3.8	2.75	5.32
Class										
Standard 4	36	7441	17.0	12.36	23.00	17	3582	8.2	5.79	11.48
Standard 5	33	6324	14.5	10.22	20.20	13	2525	5.8	2.88	11.33
Standard 6	42	5353	12.1	7.81	18.42	21	2889	6.6	4.60	9.26
Remove class										
Form 1	57	6498	15.2	11.32	20.20	16	1762	4.1	2.48	6.81
Form 2	39	4441	11.1	7.24	16.55	10	1221	3.0	1.10	8.11
Form 3	29	3519	8.8	4.81	15.44	12	1446	3.6	1.93	6.62
Form 4	13	1905	5.0	2.53	9.63	11	1645	4.3	2.74	6.74
Form 5	19	1922	5.3	3.02	9.03	11	1126	3.1	1.58	5.92
Ethnicity										
Malay	53	7460	16.5	11.97	22.33	24	3822	8.5	5.64	12.49
Chinese	34	5303	9.8	6.45	14.73	25	3905	7.2	5.38	9.70
Indian	1	223	18.3	3.82	55.97					
Bumiputera Sabah	144	19380	10.2	7.52	13.58	55	7573	4.0	2.87	5.47
Bumiputera Sarawak	5	790	16.4	7.08	33.44					
Others	30	4247	12.9	8.46	19.18	7	896	2.7	1.18	6.15
BMI-for age status (BAZ)										
Thinness (<-2sd)	21	3039	15.6	9.69	24.20	6	817	4.2	2.00	8.61
Normal ($\geq -2sd - \leq +1sd$)	188	26245	11.4	9.09	14.18	82	12024	5.2	3.98	6.81
Overweight ($> +1sd - \leq +2sd$)	34	4493	9.7	5.77	16.00	15	2172	4.7	2.72	8.04
Obese ($> +2sd$)	25	3626	11.2	7.38	16.67	8	1182	3.7	1.82	7.20
Height-for - age status (HAZ)										
Stunting (<-2sd)	31	4477	11.4	7.03	17.92	4	459	1.2	0.43	3.16
Normal ($\geq -2sd$)	237	32926	11.4	9.28	13.91	107	15737	5.4	4.30	6.88

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
Sabah	256	37184	11.3	9.24	13.76
Locality of School					
Urban	121	19330	12.5	9.73	16.03
Rural	135	17854	10.2	7.57	13.65
Sex					
Boys	138	20326	12.3	9.63	15.54
Girls	118	16858	10.3	7.88	13.40
Class					
Standard 4	36	7792	17.8	12.47	24.84
Standard 5	35	7026	16.1	10.40	24.15
Standard 6	37	4962	11.3	6.62	18.50
Remove class					
Form 1	45	5184	12.2	9.16	15.96
Form 2	39	4451	11.1	7.47	16.17
Form 3	17	1999	5.0	2.65	9.16
Form 4	20	3010	7.9	4.49	13.53
Form 5	27	2759	7.6	4.68	11.98
Ethnicity					
Malay	41	5450	12.1	8.05	17.68
Chinese	37	6475	12.0	9.82	14.62
Indian	1	111	9.2	1.36	42.57
Bumiputera Sabah	138	19308	10.1	7.61	13.33
Bumiputera Sarawak	2	312	6.5	2.18	17.65
Others	37	5527	16.8	12.21	22.66
BMI-for age status (BAZ)					
Thinness (<-2sd)	15	2526	13.0	7.25	22.16
Normal ($\geq -2sd - \leq +1sd$)	178	25438	11.0	8.72	13.89
Overweight (> +1sd - $\leq +2sd$)	39	5328	11.6	8.11	16.20
Obese (> +2sd)	24	3891	12.0	8.62	16.54
Height-for - age status (HAZ)					
Stunting (<-2sd)	28	4043	10.3	5.89	17.34
Normal ($\geq -2sd$)	228	33141	11.5	9.50	13.78

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
Sabah	129	18698	11.9	9.00	15.51	282	41489	26.4	22.90	30.13
Locality of School										
Urban	66	9980	12.2	7.73	18.73	153	23798	29.1	23.64	35.22
Rural	63	8718	11.5	8.61	15.26	129	17691	23.4	19.96	27.21
Sex										
Boys	76	10955	12.8	9.26	17.52	135	19251	22.6	18.01	27.85
Girls	53	7743	10.7	7.89	14.47	147	22238	30.9	25.64	36.61
Class										
Standard 4	23	4475	14.7	9.19	22.69	43	8869	29.1	20.41	39.73
Standard 5	15	2955	10.4	7.45	14.44	34	6728	23.8	18.40	30.12
Standard 6	21	2659	11.0	6.50	17.88	59	8257	34.0	27.87	40.75
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	30	3427	16.0	11.11	22.49	50	5554	25.9	19.27	33.90
Form 2	20	2597	14.4	6.46	29.10	34	3948	21.9	15.87	29.42
Form 3	8	947	7.9	4.00	14.86	27	3459	28.7	19.70	39.79
Form 4	6	1042	8.4	3.41	19.41	22	3386	27.4	17.60	40.05
Form 5	6	596	5.6	2.36	12.89	13	1287	12.2	8.38	17.42
Ethnicity										
Malay	30	4239	17.2	11.71	24.57	46	6650	27.0	20.14	35.17
Chinese	18	2852	9.0	3.47	21.31	48	8701	27.4	19.26	37.41
Indian	2	203	39.4	11.32	76.75	2	201	39.0	11.17	76.44
Bumiputera Sabah	58	8026	9.9	6.54	14.65	150	20637	25.4	21.44	29.81
Bumiputera Sarawak	2	369	17.2	6.06	40.11	6	880	41.0	19.91	66.06
Others	19	3009	17.5	12.48	24.11	30	4419	25.8	15.84	39.03
BMI-for age status (BAZ)										
Thinness (<-2sd)	19	2719	22.8	11.49	40.29	11	1677	14.1	7.10	26.02
Normal ($\geq -2sd - \leq +1sd$)	82	11970	10.7	7.78	14.44	222	32923	29.3	25.29	33.68
Overweight ($> +1sd - \leq +2sd$)	15	1975	10.3	6.26	16.63	28	3940	20.6	14.25	28.92
Obese ($> +2sd$)	13	2034	14.4	8.75	22.84	21	2949	20.9	12.16	33.55
Height-for - age status (HAZ)										
Stunting (<-2sd)	18	2412	14.6	7.65	26.10	23	3288	19.9	12.76	29.68
Normal ($\geq -2sd$)	111	16286	11.6	8.50	15.52	259	38201	27.1	23.29	31.30

Table 3.6.7: Reasons for taking food supplements 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
Sabah	189	27369	17.4	14.78	20.34	29	4477	2.8	1.96	4.11
Locality of School										
Urban	86	13169	16.1	12.77	20.09	19	3040	3.7	2.45	5.61
Rural	103	14199	18.8	15.14	23.05	10	1437	1.9	1.01	3.53
Sex										
Boys	124	17914	21.0	18.07	24.23	22	3157	3.7	2.48	5.48
Girls	65	9455	13.1	10.03	16.98	7	1320	1.8	0.65	5.04
Class										
Standard 4	29	5949	19.5	13.90	26.76	7	1553	5.1	2.46	10.30
Standard 5	29	5960	21.1	16.36	26.67	2	449	1.6	0.41	5.87
Standard 6	26	3390	19.0	13.92	25.48	4	619	2.6	0.88	7.15
Remove class	-	-	-	-	-	-	-	-	-	-
Form 1	36	4079	19.0	13.92	25.48	4	415	1.9	0.81	4.54
Form 2	19	2192	12.2	6.90	20.56	4	505	2.8	0.96	7.86
Form 3	15	1845	15.3	8.32	26.48	5	580	4.8	2.01	11.09
Form 4	12	1682	13.6	6.85	25.27	1	159	1.3	0.21	7.33
Form 5	23	2272	21.5	14.06	31.49	2	197	1.9	0.50	6.66
Ethnicity										
Malay	37	4902	19.9	14.08	27.36	5	684	2.8	0.83	8.83
Chinese	36	6062	19.1	15.68	23.06	7	1251	3.9	2.17	7.06
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	89	12496	15.4	12.15	19.29	17	2542	3.1	2.05	4.75
Bumiputera Sarawak	4	532	24.8	9.51	50.82	-	-	-	-	-
Others	23	3377	19.7	14.41	26.31	-	-	-	-	-
BMI-for age status (BAZ)										
Thinness (<-2sd)	13	1821	15.3	8.54	25.89	2	221	1.9	0.41	7.92
Normal ($\geq -2sd - \leq +1sd$)	125	18262	16.3	13.65	19.25	19	3199	2.8	1.81	4.45
Overweight ($> +1sd - \leq +2sd$)	30	4091	21.4	16.44	27.43	7	849	4.4	2.11	9.14
Obese ($> +2sd$)	21	3195	22.6	14.73	33.16	1	208	1.5	0.19	10.73
Height-for - age status (HAZ)										
Stunting (<-2sd)	17	2118	12.8	7.24	21.70	2	241	1.5	0.35	5.79
Normal ($\geq -2sd$)	172	25251	17.9	15.35	20.81	27	4237	3.0	2.08	4.33

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
Sabah	90	13026	8.3	6.91	9.87
Locality of School					
Urban	38	6069	7.4	5.84	9.39
Rural	52	6957	9.2	7.19	11.71
Sex					
Boys	51	7469	8.7	6.54	11.61
Girls	39	5557	7.7	5.29	11.11
Class					
Standard 4	13	2740	9.0	5.82	13.67
Standard 5	15	2921	10.3	6.10	16.92
Standard 6	8	1019	4.2	2.27	7.62
Remove class	-	-	-	-	-
Form 1	16	1845	8.6	4.42	16.10
Form 2	15	1670	9.3	5.37	15.51
Form 3	6	739	6.1	2.64	13.58
Form 4	7	996	8.1	2.83	20.92
Form 5	10	1096	10.4	4.61	21.71
Ethnicity					
Malay	16	2292	9.3	6.62	12.94
Chinese	16	2451	7.7	3.50	16.17
Indian	1	111	21.7	2.27	76.67
Bumiputera Sabah	-	-	-	-	-
Bumiputera Sarawak	-	-	-	-	-
Others	16	2590	15.1	9.22	23.74
BMI-for age status (BAZ)					
Thinness (<-2sd)	10	1504	12.6	6.41	23.38
Normal (\geq - 2sd - \leq + 1sd)	57	8073	7.2	5.28	9.71
Overweight (> +1sd - \leq + 2sd)	13	1953	10.2	7.08	14.57
Obese (> + 2sd)	10	1495	10.6	5.17	20.51
Height-for - age status (HAZ)					
Stunting (<-2sd)	14	2191	13.3	7.96	21.28
Normal (\geq -2sd)	76	10835	7.7	6.20	9.50

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
Sabah	272	40625	12.3	9.56	15.80	116	16854	5.1	3.76	6.94
Locality of School										
Urban	158	24609	16.0	11.98	20.92	60	8877	5.8	3.90	8.41
Rural	114	16016	9.2	6.45	12.85	56	7977	4.6	2.83	7.29
Sex										
Boys	146	21994	13.2	10.29	16.89	74	10588	6.4	4.61	8.76
Girls	126	18631	11.4	8.09	15.90	42	6266	3.8	2.66	5.52
Class										
Standard 4	46	9461	21.5	14.53	30.74	23	4525	10.3	6.62	15.69
Standard 5	38	7721	17.7	12.11	25.19	12	2292	5.3	3.09	8.82
Standard 6	49	6622	15.0	11.12	19.98	14	1772	4.0	1.86	8.47
Remove class										
Form 1	43	4873	11.5	7.55	17.01	22	2554	6.0	3.40	10.39
Form 2	34	4208	10.5	4.96	20.94	10	1281	3.2	1.11	8.87
Form 3	33	4054	10.1	5.32	18.23	13	1610	4.0	2.04	7.68
Form 4	14	2263	5.9	2.87	11.90	9	1419	3.7	1.09	11.99
Form 5	15	1423	3.9	2.02	7.35	13	1401	3.8	1.61	8.80
Ethnicity										
Malay	53	7756	17.2	11.76	24.46	28	4109	9.1	5.34	15.12
Chinese	49	8224	15.2	11.63	19.63	16	2551	4.7	2.04	10.51
Indian	1	90	7.4	0.98	39.24	1	112	9.2	1.03	49.63
Bumiputera Sabah	131	18735	9.8	7.09	13.46	59	8400	4.4	3.08	6.26
Bumiputera Sarawak	4	617	12.8	4.76	30.04	3	405	8.4	2.36	25.82
Others	34	5204	15.7	10.15	23.55	9	1277	3.9	1.66	8.71
BMI-for age status (BAZ)										
Thinness (<-2sd)	12	1723	8.9	4.64	16.24	15	1899	9.8	5.83	15.88
Normal ($\geq -2sd - \leq +1sd$)	197	29322	12.7	9.65	16.59	72	10826	4.7	3.18	6.88
Overweight (>+1sd - $\leq +2sd$)	36	5186	11.2	7.95	15.55	21	3019	6.5	4.24	9.91
Obese (>+2sd)	27	4395	13.6	9.27	19.62	8	1110	3.4	1.89	6.19
Height-for - age status (HAZ)										
Stunting (<-2sd)	35	4833	12.3	6.98	20.75	14	2021	5.1	2.42	10.59
Normal ($\geq -2sd$)	237	35792	12.4	9.69	15.68	102	14833	5.1	3.82	6.86

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
Sabah	181	26533	8.1	6.47	10.01	339	47240	14.4	12.38	16.59
Locality of School										
Urban	92	14266	9.2	7.12	11.92	152	22754	14.7	12.32	17.56
Rural	89	12267	7.0	4.96	9.84	187	24486	14.0	11.11	17.52
Sex										
Boys	107	15699	9.5	7.44	11.94	176	24299	14.6	12.38	17.23
Girls	74	10834	6.6	4.99	8.81	163	22941	14.1	11.66	16.88
Class										
Standard 4	31	6524	14.9	11.61	18.82	36	7637	17.4	11.33	25.75
Standard 5	23	4596	10.5	6.67	16.27	36	7167	16.4	10.38	25.06
Standard 6	31	4159	9.4	6.80	12.95	52	7116	16.1	11.92	21.50
Remove class										
Form 1	29	3266	7.7	4.81	12.03	59	6753	15.9	11.86	20.92
Form 2	30	3381	8.5	5.48	12.83	47	5302	13.3	9.09	18.94
Form 3	8	1052	2.6	1.18	5.70	39	4748	11.8	8.46	16.20
Form 4	14	2047	5.4	2.90	9.75	29	4381	11.5	8.14	16.00
Form 5	15	1509	4.1	2.60	6.48	41	4136	11.3	7.86	15.99
Ethnicity										
Malay	31	4443	9.9	6.86	13.96	50	6726	14.9	10.12	21.45
Chinese	29	4983	9.2	7.08	11.91	51	8655	16.0	13.02	19.52
Indian	2	198	16.3	3.78	49.20	2	222	18.3	4.76	50.20
Bumiputera Sabah	96	13340	7.0	5.42	8.99	184	24052	12.6	10.78	14.70
Bumiputera Sarawak	3	426	8.8	3.21	21.99	5	776	16.1	6.36	35.10
Others	20	3143	9.5	5.98	14.75	47	6808	20.6	14.67	28.05
BMI-for age status (BAZ)										
Thinness (<-2sd)	8	1303	6.7	3.13	13.76	32	4885	25.1	16.51	36.21
Normal ($\geq -2sd - \leq +1sd$)	134	19994	8.7	6.80	11.00	238	32885	14.3	12.43	16.33
Overweight (> +1sd - $\leq +2sd$)	26	3481	7.5	4.61	12.03	42	5572	12.0	9.20	15.60
Obese (> +2sd)	13	1755	5.4	3.42	8.58	27	3898	12.1	7.36	19.26
Height-for - age status (HAZ)										
Stunting (<-2sd)	15	2036	5.2	3.29	8.06	36	4743	12.1	8.00	17.80
Normal ($\geq -2sd$)	166	24497	8.5	6.76	10.57	303	42497	14.7	12.68	16.97

3.7 Food and nutrition labeling among adolescents (Secondary 1 To Secondary 5) in Sabah

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3.7.1 Introduction

Recognizing the need for more effective regulation of the nutrition labels and claims on 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 has been introduced whereby manufacturers are required to describe the nutritional qualities of a food product factually and informatively.

Nutrition information on food labels are used to assist in choosing food choices. The implementation of Front-of-Pack (FOP) labelling is listed as one of the 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 on food and nutritional labelling among adolescents in Malaysia.

3.7.2 Objectives

3.7.2.1 General objective

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

3.7.2.2 Specific objectives:

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 was read from the food label.
4. To determine the types of information (expiry date, nutrition facts, halal logo, food ingredients, storage instruction) that was read on the food label.
5. To determine the understanding of nutrition labelling (nutrition facts and front of pack).
6. To determine the knowledge on the most and least content of ingredients based on the list of food ingredients.

3.7.3 Variable definitions

There were three classifications used in this study.

- a. Always: read food labels every time when buying or receiving food/drinks
- b. Sometimes: occasionally or once in a while read food labels when buying or receiving food/drink
- c. Never: did 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 reading food labels when buying or receiving food/drink among adolescents in Sabah

More than one third [35.1% (95%CI: 30.51,39.93)] of the adolescents reported always reading food labels when buying or receiving food; 48.5% (95%CI: 43.55, 53.51) reported reading food labels sometimes and 16.4% (95%CI: 13.87,19.31) reported as never read food labels (**Table 3.7.1**). Among those reported as always reading food labels, boys [37.2% (95%CI: 31.43,43.29) showed slightly higher percentage compared to girls [33.0% (95%CI: 27.56, 38.94)].

3.7.4.2 Reasons for not reading food and nutrition labelling among adolescents in Sabah

Among those who did not read food labels, the main reasons for not doing so were: the food labels were not interesting [33.4% (95%CI: 24.80, 43.36)], followed by did not understand food labels [17.1% (95%CI: 11.49,24.65)] and time constraint [14.6% (95%CI: 9.79,21.20)]. The results also revealed that among those who were already aware of food label information [13.4% (95%CI: 10.14, 17.48)], 12.9% (95%CI: 7 8.63.18.73) felt that the size of the print was too small and 11.8% (95%CI: 6.66,19.98) did not know the importance of food labels (**Table 3.7.2**).

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

Among those who read the nutrition information, the four most common types of nutritional information being read were total energy content [35.1% (95%CI: 32.20,38.02)], carbohydrate content (including sugar) [32.0% (95%CI: 28.11,36.20)], fat content [31.3% (95%CI: 26.06,37.11)] and protein content [19.5% (95%CI: 15.74, 23.91)]. It was followed by vitamin content [20.1% (95%CI: 15.65,25.44)], mineral content [6.9% (95%CI: 5.01,9.48)] sodium content [6.7% (95%CI: 4.71,9.41)] and the least were fiber [6.7% (95%CI: 5.13,8.70)] (**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, dietary declaration (nutrition claim), nutrition facts, halal logo, food ingredients, storage instruction) that were read on food labels, most of the adolescents read expiry date [72.9% (95%CI: 65.44,79.32)], followed by halal logo [30.5% (95%CI: 23.93, 37.99)], food ingredients [20.5% (95%CI: 15.05,27.33)], nutrition fact [20.0% (95%CI: 15.84,24.99)], dietary declaration (nutrition claim) [12.8% (95%CI: 10.04,16.23)] and storage instruction [11.5% (95%CI: 7.97,16.30)] (**Table 3.7.4**).

3.7.4.5 Understanding of nutrition facts among adolescents in Sabah

Overall, 49.6% (95%CI: 42.99,56.17) and 45.9% (95%CI: 39.91, 52.09) of the adolescents had given correct responses to the question assessing interpretation of the energy and sugar contents based on the nutrition facts given. While only 33.8% (95%CI: 27.27,40.92)] correct responses answer for both energy and sugar (**Table 3.7.5**).

3.7.4.6 Understanding of front of pack labelling among adolescents in Sabah

Overall, 23.4% (95%CI : 24.31, 35.17] and 39.8% (95%CI: 35.18,44.51) of the adolescents had correct responses to the question assessing interpretation of the energy content and question assessing interpretation of the percentage of energy content based on the front of pack labelling . However, only 17.8% (95%CI: 13.79, 22.60)] had correct responses to questions assessing interpretations of both energy content and the percentage of energy content based on the front of pack labelling (**Table 3.7.6**).

3.7.4.7 Understanding of the most and least used ingredients based on the list of food ingredients among adolescents in Sabah

Overall, 48.2% (95%CI: 42.34 ,54.07) of the adolescents had given correct responses to the question assessing interpretation on the most used ingredient in the food based on the list of ingredients given. Girls [54.5% (95%CI: 47.65,61.24)] reported a higher prevalence of interpreting correctly as compared to the boys [41.5% (95%CI: 35.26,48.10)]. While, 18.9% (95%CI: 16.56,21.42) of adolescents had given correct responses to the question assessing interpretation of the least used ingredient in the food based on the list of ingredients given. However, the results showed a low level of correct responses [6.6% (95%CI: 5.06,8.54)]to questions assessing interpretations of both the most and the least used ingredients based on the list of ingredients (**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 Sabah. 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 fact is necessary. 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, low prevalence of knowing how to determine the most and least used ingredients based on the list of food ingredient by the adolescents in sabah.

3.7.6 Recommendations

The findings provide significant information for the policymaker and health authorities to plan nutrition education and promotion programme to create awareness and knowledge on benefits of reading food and nutrition labelling. Awareness and continuous effort to better understand the food and nutrition labelling should be inculcated within all nutrition intervention programmes.

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.

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	589	69641	35.1	30.51	39.93	819	96332	48.5	43.55	53.51
Locality of School										
Urban	193	23456	32.1	24.74	40.40	310	37992	51.9	45.83	57.99
Rural	396	46186	36.8	31.49	42.50	509	58340	46.5	40.02	53.14
Sex										
Boys	307	36746	37.2	31.43	43.29	377	44444	44.9	39.86	50.15
Girls	282	32896	33.0	27.56	38.94	442	51888	52.1	45.73	58.31
Class										
Form 1	165	18975	44.6	37.53	51.87	148	17366	40.8	33.37	48.69
Form 2	115	13435	33.2	25.50	41.93	171	19377	47.9	40.35	55.53
Form 3	118	14297	35.3	27.04	44.44	157	19035	46.9	37.88	56.20
Form 4	81	12028	31.4	23.54	40.55	133	19549	51.1	40.82	61.25
Form 5	110	10906	29.7	23.85	36.31	210	21005	57.2	49.31	64.76
Ethnicity										
Malay	96	11415	39.6	29.72	50.34	109	12882	44.7	34.00	55.82
Chinese	37	3740	30.0	26.37	33.99	61	5975	48.0	41.82	54.24
Indian	3	313	33.3	7.81	74.58	4	421	44.8	16.07	77.48
Bumiputera Sabah	401	47922	34.2	29.21	39.56	591	70577	50.4	45.70	55.03
Bumiputera Sarawak	6	711	28.1	14.18	47.92	10	1225	48.4	25.55	71.87
Others	46	5541	40.6	34.00	47.47	44	5253	38.4	31.28	46.15
BMI-for-age status (BAZ)										
Thinness (<-2sd)	32	3661	34.2	23.53	46.78	42	5320	49.7	35.25	64.23
Normal (≥-2sd - ≤+1sd)	411	49263	34.7	29.94	39.85	608	70903	50.0	45.25	54.72
Overweight (>+1sd - ≤+2sd)	90	10339	36.2	29.42	43.53	107	12880	45.1	36.98	53.42
Obese (>+2sd)	54	6189	36.7	24.35	51.11	60	7051	41.8	30.08	54.58
Height-for-age status (HAZ)										
Stunting (<-2sd)	85	10387	37.1	30.90	43.85	118	13960	49.9	43.63	56.21
Normal (≥-2sd)	502	59065	34.7	30.06	39.73	699	82194	48.3	42.94	53.78

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
SABAH	275	32585	16.4	13.87	19.31
Locality of School					
Urban	98	11699	16.0	11.79	21.34
Rural	177	20885	16.7	13.65	20.16
Sex					
Boys	15100.0%	17686	17.9	14.36	22.06
Girls	124	14899	14.9	11.82	18.73
Class					
Form 1	57	6217	14.6	9.60	21.61
Form 2	66	7648	18.9	12.77	27.07
Form 3	59	7220	17.8	12.37	24.95
Form 4	45	6696	17.5	13.75	21.99
Form 5	48	4804	13.1	9.58	17.62
Ethnicity					
Malay	39	4552	15.8	11.61	21.09
Chinese	27	2734	22.0	16.92	28.00
Indian	2	206	21.9	5.58	57.16
Bumiputera Sabah	178	21627	15.433901	12.49	18.92
Bumiputera Sarawak	5	598	23.6	8.10	51.97
Others	24	2868	20.99512	15.93	27.15
BMI-for-age status (BAZ)					
Thinness (<-2sd)	14	1720	16.1	9.71	25.42
Normal (≥-2sd - ≤+1sd)	183	21684	15.3	12.62	18.40
Overweight (>+1sd - ≤+2sd)	44	5360	18.8	14.41	24.04
Obese (>+2sd)	32	3618	21.5	14.39	30.77
Height-for-age status (HAZ)					
Stunting (<-2sd)	32	3618	12.9	7.89	20.48
Normal (≥-2sd)	241	28764	16.9	14.14	20.12

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

Table 3.7.2: Reasons for not reading food label among adolescents in Sabah (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
SABAH	36	4190	12.9	8.63	18.73	46	5567	17.1	11.49	24.65
Locality of School										
Urban	14	1587	13.6	9.95	18.22	13	1534	13.1	6.22	25.55
Rural	22	2603	12.5	6.75	21.88	33	4033	19.3	12.46	28.69
Sex										
Boys	25	2936	16.6	10.47	25.32	25	3009	17.0	10.50	26.38
Girls	11	1253	8.4	3.79	17.63	21	2557	17.2	10.30	27.21
Class										
Form 1	6	608	9.8	3.13	26.68	8	938	15.1	5.09	37.03
Form 2	11	1259	16.5	9.72	26.50	14	1624	21.2	11.73	35.35
Form 3	10	1310	18.1	6.36	41.96	8	976	13.5	7.05	24.39
Form 4	5	615	9.2	2.62	27.61	5	822	12.3	5.38	25.64
Form 5	4	398	8.3	3.01	20.82	11	1206	25.1	11.06	47.48
Ethnicity										
Malay	8	965	21.2	10.52	38.09	10	1128	24.8	18.43	32.46
Chinese	5	466	17.1	10.38	26.75	3	304	11.1	4.61	24.43
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	19	2351	10.9	6.11	18.60	30	3718	17.2	10.56	26.74
Bumiputera Sarawak	-	-	-	-	-	-	-	-	-	-
Others	4	408	14.2	6.06	29.89	3	416	14.5	4.69	36.93
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	318	18.5	4.69	51.05	3	370	21.5	8.78	43.79
Normal (≥-2sd - ≤+1sd)	20	2408	11.1	6.55	18.21	26	3124	14.4	8.63	23.08
Overweight (>+1sd - ≤+2sd)	8	961	17.9	8.78	33.13	9	1101	20.5	11.07	34.94
Obese (>+2sd)	5	503	13.9	6.13	28.60	8	972	26.9	11.91	49.95
Height-for-age status (HAZ)										
Stunting (<-2sd)	4	411	11.4	3.41	31.72	2	236	6.5	1.41	25.36
Normal (≥-2sd)	32	3779	13.1	8.86	19.05	44	5331	18.5	12.53	26.53

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
SABAH	93	10897	33.4	24.80	43.36	31	3838	11.8	6.66	19.98
Locality of School										
Urban	41	4897	41.9	26.38	59.13	7	877	7.5	5.92	9.46
Rural	52	6000	28.7	20.81	38.20	24	2961	14.2	7.16	26.14
Sex										
Boys	39	4636	26.2	16.94	38.22	15	1698	9.6	5.44	16.41
Girls	54	6262	42.0	29.31	55.90	16	2140	14.4	6.58	28.53
Class										
Form 1	16	1751	28.2	17.80	41.51	8	835	13.4	7.10	23.94
Form 2	24	2748	35.9	19.89	55.88	6	717	9.4	3.55	22.52
Form 3	20	2433	33.7	20.73	49.68	6	756	10.5	3.71	26.20
Form 4	14	2149	32.1	16.09	53.81	7	1129	16.9	7.11	34.98
Form 5	19	1817	37.8	20.77	58.52	4	401	8.4	3.19	20.11
Ethnicity										
Malay	10	1119	24.6	15.55	36.58	5	574	12.6	5.31	27.10
Chinese	11	1095	40.1	25.95	56.02	2	185	6.8	3.20	13.74
Indian	-	-	-	-	-	-	-	-	-	-
Bumiputera Sabah	67	8071	37.3	27.23	48.65	20	2597	12.0	6.35	21.55
Bumiputera Sarawak	1	100	16.8	4.50	46.34	-	-	-	-	-
Others	4	512	17.9	7.79	35.84	4	482	16.8	6.59	36.63
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	226	13.2	3.01	42.59	3	388	22.6	7.92	49.68
Normal (\geq -2sd - \leq +1sd)	65	7563	34.9	24.03	47.56	19	2384	11.0	7.14	16.56
Overweight (>+1sd - \leq +2sd)	17	2062	38.5	24.09	55.18	7	857	16.0	4.19	45.29
Obese (>+2sd)	9	1046	28.9	14.93	48.54	2	209	5.8	1.41	20.75
Height-for-age status (HAZ)										
Stunting (<-2sd)	7	773	21.4	9.17	42.22	4	466	12.9	4.40	32.17
Normal (\geq -2sd)	86	10124	35.2	25.94	45.72	27	3372	11.7	6.10	21.35

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
SABAH	41.000	4756	14.6	9.79	21.20	37	4362	13.4	10.14	17.48
Locality of School										
Urban	11	1318	11.3	6.74	18.23	13	1507	12.9	8.21	19.65
Rural	30	3437	16.5	9.94	26.02	24	2855	13.7	9.60	19.09
Sex										
Boys	28	3180	18.0	10.93	28.13	22	2618	14.8	10.38	20.68
Girls	13	1576	10.6	5.89	18.27	15	1744	11.7	7.38	18.09
Class										
Form 1	8	836	13.4	4.32	34.84	12	1335	21.5	14.45	30.70
Form 2	9	1095	14.3	6.37	29.11	5	599	7.8	2.84	19.81
Form 3	10	1161	16.1	10.62	23.59	8	985	13.6	7.84	22.67
Form 4	6	842	12.6	5.51	26.21	6	842	12.6	4.15	32.33
Form 5	8	822	17.1	8.23	32.17	6	601	12.5	4.95	28.23
Ethnicity										
Malay	4	468	10.3	3.63	25.85	4	538	11.8	4.73	26.57
Chinese	3	286	10.5	5.15	20.05	3	273	10.0	4.68	20.03
Indian	-	-	-	-	-	1	111	54.1	4.71	96.56
Bumiputera Sabah	29	3437	15.9	10.52	23.29	21	2458	11.4	7.40	17.06
Bumiputera Sarawak	1	100	16.8	4.50	46.34	3	397	66.4	24.25	92.45
Others	4	465	16.2	6.03	36.87	5	585	20.4	7.33	45.38
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	267	15.5	3.55	47.77	2	277	16.1	4.60	43.24
Normal (≥-2sd - ≤+1sd)	29	3359	15.5	9.76	23.70	29	3418	15.8	11.58	21.09
Overweight (>+1sd - ≤+2sd)	4	488	9.1	3.45	21.92	2	215	4.0	0.82	17.46
Obese (>+2sd)	6	642	17.8	5.59	44.02	3	344	9.5	3.13	25.41
Height-for-age status (HAZ)										
Stunting (<-2sd)	11	1308	36.2	23.01	51.78	3	342	9.4	3.33	24.03
Normal (≥-2sd)	30	3447	12.0	7.69	18.21	33	3912	13.6	10.06	18.13

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	500	58177	35.1	32.20	38.02	456	53148	32.0	28.11	36.20
Locality of School										
Urban	181	21607	35.2	31.79	38.70	179	21770	35.4	26.98	44.90
Rural	319	36570	35.0	30.95	39.25	277	31378	30.0	27.10	33.11
Sex										
Boys	249	29354	36.2	31.66	40.90	185	21690	26.7	22.91	30.90
Girls	251	28823	34.0	31.40	36.69	271	31458	37.1	31.82	42.72
Class										
Form 1	94	10809	29.7	23.58	36.75	82	9411	25.9	20.98	31.50
Form 2	108	12547	38.2	29.50	47.81	85	9590	29.2	21.66	38.15
Form 3	99	11996	36.0	27.22	45.81	101	11942	35.8	28.25	44.19
Form 4	71	10165	32.2	23.78	41.93	73	11048	35.0	25.08	46.39
Form 5	128	12660	39.7	32.98	46.78	115	11156	35.0	27.67	43.03
Ethnicity										
Malay	79	9383	38.6	30.96	46.88	61	7086	29.2	20.39	39.83
Chinese	40	3858	39.7	29.07	51.42	34	3282	33.8	29.16	38.74
Indian	2	245	33.4	6.51	78.27	3	310	42.3	13.63	77.33
Bumiputera Sabah	341	40184	33.9	30.12	37.92	332	39341	33.2	28.51	38.25
Bumiputera Sarawak	7	805	41.6	20.95	65.66	5	587	30.3	11.67	58.93
Others	31	3702	34.3	28.20	40.96	21	2541	23.5	13.86	37.07
BMI-for-age status (BAZ)										
Thinness (<-2sd)	24	2802	31.2	21.75	42.53	20	2507	27.9	18.26	40.15
Normal (≥-2sd - ≤+1sd)	374	43770	36.4	32.75	40.26	328	38015	31.6	27.99	35.52
Overweight (>+1sd - ≤+2sd)	65	7408	31.9	26.44	37.91	67	7951	34.2	24.52	45.51
Obese (>+2sd)	36	4102	31.0	24.08	38.85	41	4674	35.3	25.95	45.94
Height-for-age status (HAZ)										
Stunting (<-2sd)	75	8915	36.6	29.48	44.39	75	8916	36.6	30.46	43.25
Normal (≥-2sd)	424	49167	34.8	31.23	38.56	381	44231	31.3	26.92	36.06

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
SABAH	452	51989	31.3	26.06	37.11	280	32372	19.5	15.74	23.91
Locality of School										
Urban	176	20925	34.1	25.73	43.49	98	12100	19.7	13.20	28.33
Rural	276	31063	29.7	23.27	37.09	182	20272	19.4	15.10	24.56
Sex										
Boys	177	20678	25.5	21.19	30.28	146	17473	21.5	15.66	28.83
Girls	275	31311	36.9	29.94	44.51	134	14899	17.6	14.66	20.92
Class										
Form 1	82	9373	25.8	18.44	34.82	46	5260	14.5	10.49	19.65
Form 2	84	9242	28.2	17.02	42.85	47	5268	16.1	9.90	24.98
Form 3	104	12395	37.2	26.66	49.08	52	6091	18.3	10.20	30.58
Form 4	64	9612	30.4	24.60	36.98	49	7113	22.5	15.68	31.25
Form 5	118	11368	35.6	27.16	45.09	86	8640	27.1	21.31	33.73
Ethnicity										
Malay	69	8125	33.4	28.33	38.98	23	2733	11.2	7.60	16.33
Chinese	40	3882	40.0	30.57	50.15	31	3074	31.6	25.88	38.03
Indian	2	205	27.9	6.74	67.45	1	90	12.2	1.66	53.51
Bumiputera Sabah	317	36908	31.1	25.40	37.54	211	24889	21.0	16.69	26.08
Bumiputera Sarawak	6	786	40.6	21.76	62.73	1	130	6.7	0.83	38.29
Others	18	2083	19.3	13.45	26.89	13	1458	13.5	5.91	27.96
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	1303	14.5	7.29	26.79	12	1408	15.7	7.27	30.62
Normal (≥-2sd - ≤+1sd)	315	36019	30.0	24.49	36.11	214	24667	20.5	16.02	25.91
Overweight (>+1sd - ≤+2sd)	80	9357	40.3	33.27	47.75	33	3793	16.3	10.08	25.38
Obese (>+2sd)	45	5215	39.4	25.23	55.58	20	2410	18.2	11.74	27.12
Height-for-age status (HAZ)										
Stunting (<-2sd)	60	7032	28.9	23.30	35.19	42	4862	20.0	15.60	25.19
Normal (≥-2sd)	391	44862	31.8	26.25	37.83	237	27415	19.4	15.39	24.17

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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	
SABAH	96	11104	6.7	4.71	9.41	289	33366	20.1	15.65	25.44
Locality of School										
Urban	44	5218	8.5	4.61	15.13	93	11208	18.2	11.49	27.71
Rural	52	5886	5.6	4.03	7.81	196	22159	21.2	15.90	27.68
Sex										
Boys	44	5196	6.4	4.08	9.90	124	14661	18.1	12.93	24.64
Girls	52	5907	7.0	4.87	9.87	165	18705	22.1	17.41	27.55
Class										
Form 1	14	1608	4.4	2.18	8.77	59	6885	18.9	13.17	26.48
Form 2	15	1824	5.6	2.98	10.12	48	5361	16.3	8.62	28.79
Form 3	17	2017	6.1	3.11	11.44	58	6840	20.5	13.77	29.44
Form 4	17	2393	7.6	4.32	12.95	51	7117	22.5	12.54	37.13
Form 5	33	3262	10.2	6.42	15.89	73	7163	22.4	17.35	28.53
Ethnicity										
Malay	9	1025	4.2	2.01	8.64	21	2478	10.2	6.01	16.78
Chinese	11	1070	11.0	7.71	15.49	24	2340	24.1	15.37	35.66
Indian	-	-	-	-	-	1	87	11.9	1.14	61.38
Bumiputera Sabah	73	8658	7.3	4.97	10.62	227	26530	22.4	17.83	27.72
Bumiputera Sarawak	1	112	5.8	0.65	36.67	2	273	14.1	3.09	45.74
Others	2	238	2.2	0.45	10.18	14	1658	15.4	8.66	25.76
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	286	3.2	0.71	13.11	15	1755	19.5	11.65	30.90
Normal (\geq -2sd - \leq +1sd)	69	7745	6.4	4.81	8.59	214	24394	20.3	15.62	25.95
Overweight (>+1sd - \leq +2sd)	17	2134	9.2	3.52	21.94	39	4669	20.1	12.82	30.11
Obese (>+2sd)	8	938	7.1	4.12	11.91	20	2464	18.6	10.43	30.99
Height-for-age status (HAZ)										
Stunting (<-2sd)	13	1317	5.4	2.42	11.66	49	5463	22.4	16.44	29.85
Normal (\geq -2sd)	83	9786	6.9	4.78	9.93	239	27819	19.7	15.23	25.07

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	101	11485	6.9	5.01	9.48	98	11118	6.7	5.13	8.70
Locality of School										
Urban	38	4259	6.9	3.49	13.31	40	4663	7.6	4.86	11.66
Rural	63	7226	6.9	5.03	9.43	58	6455	6.2	4.48	8.46
Sex										
Boys	51	6004	7.4	4.94	10.93	48	5703	7.0	5.12	9.57
Girls	50	5480	6.5	4.40	9.41	50	5414	6.4	4.47	9.05
Class										
Form 1	14	1600	4.4	1.97	9.57	23	2658	7.3	4.32	12.12
Form 2	20	2311	7.0	3.77	12.78	14	1691	5.2	3.08	8.49
Form 3	22	2568	7.7	4.76	12.24	20	2299	6.9	3.99	11.66
Form 4	19	2553	8.1	4.16	15.14	12	1705	5.4	2.70	10.50
Form 5	26	2452	7.7	4.29	13.40	29	2765	8.7	5.44	13.52
Ethnicity										
Malay	11	1217	5.0	2.98	8.29	13	1474	6.1	3.10	11.52
Chinese	13	1303	13.4	10.33	17.24	12	1189	12.2	8.58	17.18
Indian	-	-	-	-	-	1	133	18.2	1.84	72.39
Bumiputera Sabah	71	8308	7.0	5.16	9.46	66	7650	6.5	4.90	8.46
Bumiputera Sarawak	1	97	5.0	0.57	32.60	-	-	-	-	-
Others	5	560	5.2	2.28	11.36	6	672	6.2	2.65	13.93
BMI-for-age status (BAZ)										
Thinness (<-2sd)	2	194	2.2	0.50	8.88	-	-	-	-	-
Normal (≥-2sd - ≤+1sd)	75	8352	7.0	4.80	9.96	75	8399	7.0	5.16	9.41
Overweight (>+1sd - ≤+2sd)	15	1767	7.6	4.36	12.94	17	1966	8.5	5.46	12.91
Obese (>+2sd)	9	1172	8.8	3.39	21.18	6	753	5.7	2.76	11.38
Height-for-age status (HAZ)										
Stunting (<-2sd)	14	1552	6.4	3.27	12.07	12	1394	5.7	3.08	10.42
Normal (≥-2sd)	87	9933	7.0	5.07	9.67	86	9723	6.9	5.34	8.83

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	1028	121053	72.9	65.44	79.32	184	21275	12.8	10.04	16.23
Locality of School										
Urban	390	48095	78.3	69.88	84.83	74	8889	14.5	8.80	22.87
Rural	638	72958	69.8	59.62	78.34	110	12387	11.9	9.46	14.75
Sex										
Boys	456	54063	66.6	57.71	74.43	89	10562	13.0	10.22	16.41
Girls	572	66990	79.0	72.60	84.25	95	10714	12.6	8.80	17.82
Class										
Form 1	202	23871	65.7	53.33	76.23	35	3874	10.7	6.11	17.95
Form 2	207	23411	71.3	59.48	80.86	34	3768	11.5	6.36	19.87
Form 3	202	24282	72.8	56.84	84.53	32	3886	11.7	7.56	17.56
Form 4	165	24460	77.5	66.97	85.35	30	4706	14.9	8.68	24.39
Form 5	252	25030	78.4	70.28	84.84	53	5042	15.8	10.43	23.21
Ethnicity										
Malay	133	15694	64.6	55.26	72.94	25	2811	11.6	7.51	17.41
Chinese	73	7206	74.2	66.58	80.54	25	2296	23.6	14.31	36.45
Indian	5	537	73.2	33.94	93.54	1	107	14.6	1.43	66.88
Bumiputera Sabah	747	89336	75.4	66.55	82.50	124	15087	12.7	9.82	16.34
Bumiputera Sarawak	10	1210	62.5	38.00	81.92	1	96	5.0	0.48	36.26
Others	60	7071	65.5	59.62	70.95	8	878	8.1	3.24	18.98
BMI-for-age status (BAZ)										
Thinness (<-2sd)	53	6384	71.1	55.80	82.71	5	529	5.9	1.49	20.59
Normal (≥-2sd - ≤+1sd)	751	88417	73.6	65.42	80.39	137	15783	13.1	10.85	15.81
Overweight (>+1sd - ≤+2sd)	139	16403	70.6	58.64	80.33	22	2618	11.3	5.70	21.07
Obese (>+2sd)	81	9482	71.6	62.09	79.54	20	2346	17.7	9.77	29.99
Height-for-age status (HAZ)										
Stunting (<-2sd)	151	18031	74.1	64.34	81.88	27	3268	13.4	8.53	20.50
Normal (≥-2sd)	873	102655	72.7	64.48	79.57	157	18007	12.7	9.64	16.67

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	290	33240	20.0	15.84	24.99	441	50630	30.5	23.93	37.991
Locality of School										
Urban	116	13900	22.6	15.10	32.45	113	13629	22.2	11.20	39.178
Rural	174	19339	18.5	14.02	24.02	328	37001	35.4	31.25	39.783
Sex										
Boys	131	15547	19.1	14.45	24.93	212	24384	30.0	24.18	36.619
Girls	159	17693	20.9	16.43	26.14	229	26246	31.0	22.54	40.853
Class										
Form 1	42	4774	13.1	8.95	18.87	99	11350	31.2	21.46	43.009
Form 2	56	6211	18.9	13.36	26.12	85	9813	29.9	22.12	39.059
Form 3	54	6487	19.5	13.67	26.94	87	10191	30.6	19.20	44.941
Form 4	43	6504	20.6	13.88	29.45	59	8254	26.1	14.43	42.615
Form 5	95	9264	29.0	20.56	39.27	111	11022	34.5	23.49	47.56
Ethnicity										
Malay	29	3441	14.2	10.45	18.91	72	8379	34.5	24.44	46.144
Chinese	34	3230	33.2	23.08	45.26	11	1167	12.0	6.28	21.751
Indian	1	90	12.2	1.66	53.51	1	87	11.9	1.14	61.382
Bumiputera Sabah	214	25061	21.1	16.74	26.35	322	36951	31.2	23.67	39.834
Bumiputera Sarawak	3	324	16.7	5.38	41.59	6	748	38.7	17.85	64.626
Others	9	1094	10.1	4.01	23.35	29	3298	30.6	22.28	40.311
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	1425	15.9	7.99	29.06	15	1861	20.7	11.57	34.314
Normal (≥-2sd - ≤+1sd)	207	23401	19.5	15.74	23.85	324	37236	31.0	24.13	38.792
Overweight (>+1sd - ≤+2sd)	49	5660	24.4	16.41	34.61	57	6475	27.9	18.80	39.242
Obese (>+2sd)	23	2754	20.8	10.91	36.05	44	4974	37.6	28.78	47.26
Height-for-age status (HAZ)										
Stunting (<-2sd)	42	4949	20.3	15.76	25.82	56	6527	26.8	20.46	34.28
Normal (≥-2sd)	248	28291	20.0	15.30	25.77	384	44020	31.2	23.74	39.701

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	302	34050	20.5	15.05	27.33	169	19075	11.5	7.97	16.30
Locality of School										
Urban	98	11792	19.2	12.36	28.56	68	8002	13.0	7.32	22.10
Rural	204	22259	21.3	14.08	30.87	101	11074	10.6	6.57	16.63
Sex										
Boys	113	13044	16.1	11.36	22.23	60	6969	8.6	5.46	13.24
Girls	189	21006	24.8	18.23	32.73	109	12106	14.3	10.42	19.27
Class										
Form 1	50	5810	16.0	8.73	27.46	34	3944	10.9	5.51	20.26
Form 2	52	5802	17.7	10.15	29.00	31	3329	10.1	5.01	19.47
Form 3	57	6623	19.9	10.03	35.54	37	4355	13.1	6.53	24.43
Form 4	42	5941	18.8	10.87	30.57	18	2714	8.6	4.54	15.67
Form 5	101	9874	30.9	22.33	41.11	49	4733	14.8	9.87	21.69
Ethnicity										
Malay	28	3039	12.5	7.11	21.09	13	1318	5.4	2.44	11.61
Chinese	25	2424	24.9	18.62	32.57	23	2208	22.7	16.75	30.07
Indian	1	87	11.9	1.14	61.38	-	-	-	-	-
Bumiputera Sabah	227	26123	22.0	16.51	28.79	127	14890	12.6	8.72	17.78
Bumiputera Sarawak	4	418	21.6	5.55	56.43	1	84	4.3	0.54	27.24
Others	17	1959	18.1	9.67	31.47	5	576	5.3	2.84	9.80
BMI-for-age status (BAZ)										
Thinness (<-2sd)	4	459	5.1	2.20	11.44	4	514	5.7	2.01	15.23
Normal (≥-2sd - ≤+1sd)	220	24429	20.3	14.60	27.59	126	14153	11.8	8.70	15.76
Overweight (>+1sd - ≤+2sd)	55	6416	27.6	17.98	39.95	26	2965	12.8	4.84	29.67
Obese (>+2sd)	23	2746	20.7	11.17	35.27	13	1442	10.9	4.83	22.74
Height-for-age status (HAZ)										
Stunting (<-2sd)	39	4312	17.7	13.07	23.55	25	2910	12.0	7.62	18.27
Normal (≥-2sd)	263	29739	21.1	15.18	28.44	144	16165	11.4	7.48	17.11

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
SABAH	575	67170	33.8	27.27	40.92	835	98646	49.6	42.99	56.17
Locality of School										
Urban	240	29498	40.1	30.61	50.49	323	40154	54.6	44.14	64.75
Rural	335	37671	30.0	22.79	38.39	512	58491	46.6	39.06	54.30
Sex										
Boys	278	32928	33.2	26.95	40.18	427	50860	51.3	45.89	56.74
Girls	297	34241	34.3	26.20	43.37	408	47785	47.8	38.43	57.39
Class										
Form 1	101	11991	28.0	19.66	38.30	163	19011	44.5	34.31	55.10
Form 2	114	12692	31.3	20.71	44.23	168	19025	46.9	35.84	58.23
Form 3	111	13380	32.9	19.62	49.64	154	18711	46.0	31.65	61.08
Form 4	92	13727	35.9	27.32	45.41	146	21643	56.5	46.81	65.81
Form 5	157	15380	41.9	29.66	55.20	204	20256	55.2	41.93	67.71
Ethnicity										
Malay	68	8095	28.1	20.37	37.30	106	12633	43.8	38.81	48.89
Chinese	49	4707	37.2	32.21	42.44	68	6712	53.0	47.37	58.60
Indian	3	308	32.8	9.14	70.37	4	403	42.9	13.63	78.15
Bumiputera Sabah	421	50041	35.7	28.21	43.87	608	72890	51.9	44.11	59.66
Bumiputera Sarawak	6	738	29.1	17.38	44.54	9	1111	43.8	24.10	65.74
Others	28	3280	24.0	17.39	32.15	40	4897	35.8	23.38	50.57
BMI-for-age status (BAZ)										
Thinness (<-2sd)	20	2327	21.7	13.61	32.89	32	3818	35.7	23.88	49.51
Normal (≥-2sd - ≤+1sd)	416	49048	34.5	27.85	41.76	605	71963	50.6	43.83	57.31
Overweight (>+1sd - ≤+2sd)	84	9680	33.9	25.36	43.57	117	13664	47.8	39.00	56.77
Obese (>+2sd)	53	5912	35.1	24.47	47.38	78	8903	52.8	41.50	63.84
Height-for-age status (HAZ)										
Stunting (<-2sd)	71	8348	29.9	24.61	35.68	110	13132	47.0	40.77	53.24
Normal (≥-2sd)	502	58618	34.4	27.45	42.07	722	85216	50.0	42.82	57.17

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

Characteristic	Interpretation of sugar correct				
	Unweighted Count	Estimated Population	Prevalence (%)	95% CI	
				Lower	Upper
SABAH	781	91415	45.9	39.91	52.09
Locality of School					
Urban	320	39088	53.2	44.59	61.61
Rural	461	52327	41.7	35.46	48.20
Sex					
Boys	393	46249	46.7	41.46	51.97
Girls	388	45167	45.2	37.75	52.88
Class					
Form 1	152	17671	41.3	34.07	48.98
Form 2	161	18207	44.9	34.45	55.74
Form 3	147	17803	43.8	29.92	58.70
Form 4	117	17543	45.8	35.99	56.02
Form 5	204	20192	55.0	43.99	65.53
Ethnicity					
Malay	109	12900	44.7	37.27	52.40
Chinese	61	5848	46.2	39.74	52.79
Indian	3	308	32.8	9.14	70.37
Bumiputera Sabah	555	66194	47.2	40.02	54.43
Bumiputera Sarawak	11	1328	52.4	37.35	67.03
Others	42	4837	35.4	24.24	48.41
BMI-for-age status (BAZ)					
Thinness (<-2sd)	32	3690	34.5	23.39	47.55
Normal (≥-2sd - ≤+1sd)	561	66012	46.4	39.91	53.01
Overweight (>+1sd - ≤+2sd)	114	13317	46.6	37.16	56.28
Obese (>+2sd)	72	8194	48.6	39.14	58.17
Height-for-age status (HAZ)					
Stunting (<-2sd)	102	11966	42.8	37.52	48.22
Normal (≥-2sd)	677	79247	46.5	39.94	53.17

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
SABAH	301	35361	17.8	13.79	22.60	500	58602	29.4	24.31	35.17
Locality of School										
Urban	127	15653	21.3	14.46	30.24	213	25749	35.0	26.71	44.39
Rural	174	19708	15.7	11.64	20.85	287	32853	26.2	20.89	32.26
Sex										
Boys	145	17144	17.3	13.41	22.04	254	29993	30.3	25.09	36.02
Girls	156	18217	18.2	13.37	24.37	246	28609	28.6	22.14	36.15
Class										
Form 1	47	5555	13.0	8.27	19.84	102	11670	27.3	22.01	33.30
Form 2	57	6533	16.1	11.24	22.53	111	12618	31.1	22.82	40.78
Form 3	77	9366	23.0	13.75	35.98	107	13024	32.0	20.50	46.27
Form 4	40	6283	16.4	10.63	24.49	67	10312	26.9	18.77	37.05
Form 5	80	7624	20.8	12.87	31.74	113	10978	29.9	20.23	41.78
Ethnicity										
Malay	19	2357	8.2	4.59	14.13	54	6327	21.9	14.98	30.93
Chinese	29	2783	22.0	16.49	28.67	51	4804	38.0	27.75	49.35
Indian	-	-	-	-	-	3	288	30.6	5.80	76.00
Bumiputera Sabah	235	27985	19.9	15.44	25.35	357	42966	30.6	24.98	36.89
Bumiputera Sarawak	4	408	16.1	4.44	44.20	8	815	32.2	15.22	55.65
Others	14	1829	13.4	4.95	31.43	27	3402	24.9	17.13	34.70
BMI-for-age status (BAZ)										
Thinness (<-2sd)	11	1292	12.1	5.42	24.77	23	2653	24.8	12.82	42.50
Normal ($\geq -2sd$ - $\leq +1sd$)	215	25396	17.8	14.11	22.32	358	42138	29.6	24.44	35.37
Overweight ($>+1sd$ - $\leq +2sd$)	44	5191	18.2	12.29	26.02	74	8770	30.7	22.20	40.72
Obese ($>+2sd$)	30	3374	20.0	11.64	32.22	44	4932	29.3	21.26	38.78
Height-for-age status (HAZ)										
Stunting (<-2sd)	40	4593	16.4	12.42	21.40	58	6718	24.0	18.77	30.20
Normal ($\geq -2sd$)	260	30660	18.0	13.56	23.47	441	51776	30.4	24.82	36.56

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
SABAH	670	79098	39.8	35.18	44.51
Locality of School					
Urban	251	31299	42.6	34.47	51.14
Rural	419	47800	38.1	33.18	43.24
Sex					
Boys	341	40512	40.9	35.91	46.06
Girls	329	38586	38.6	33.01	44.55
Class					
Form 1	118	13970	32.7	21.89	45.67
Form 2	126	14503	35.7	28.17	44.09
Form 3	141	17286	42.5	33.93	51.58
Form 4	101	15204	39.7	33.10	46.75
Form 5	184	18136	49.4	39.73	59.10
Ethnicity					
Malay	75	9181	31.8	25.57	38.82
Chinese	45	4510	35.6	29.71	42.03
Indian	1	112	11.9	1.15	60.99
Bumiputera Sabah	503	59767	42.6	38.18	47.12
Bumiputera Sarawak	6	701	27.7	11.69	52.48
Others	40	4827	35.3	21.17	52.63
BMI-for-age status (BAZ)					
Thinness (<-2sd)	25	2915	27.2	18.89	37.58
Normal (≥-2sd - ≤+1sd)	491	58301	41.0	36.29	45.84
Overweight (>+1sd - ≤+2sd)	96	11147	39.0	32.64	45.77
Obese (>+2sd)	56	6532	38.7	27.97	50.75
Height-for-age status (HAZ)					
Stunting (<-2sd)	101	12037	43.0	36.60	49.73
Normal (≥-2sd)	567	66858	39.2	34.33	44.34

NATIONAL HEALTH AND MORBIDITY SURVEY 2017

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
SABAH	94	10944	6.6	5.06	8.54	688	79958	48.2	42.34	54.07
Locality of School										
Urban	25	3254	5.3	3.98	7.01	245	29942	48.7	40.40	57.13
Rural	69	7689	7.4	5.28	10.16	443	50016	47.9	40.04	55.77
Sex										
Boys	32	3731	4.6	3.30	6.36	288	33724	41.5	35.26	48.10
Girls	62	7213	8.5	6.50	11.06	400	46234	54.5	47.65	61.24
Class										
Form 1	19	2167	6.0	3.25	10.69	126	14717	40.5	33.02	48.43
Form 2	18	1965	6.0	2.88	12.06	135	15167	46.2	35.76	57.03
Form 3	21	2486	7.5	4.34	12.51	127	15182	45.5	38.35	52.93
Form 4	13	1946	6.2	4.04	9.30	107	15567	49.3	37.57	61.10
Form 5	23	2379	7.5	4.58	11.91	193	19326	60.6	53.37	67.33
Ethnicity										
Malay	11	1342	5.5	2.62	11.26	84	9914	40.8	31.46	50.87
Chinese	8	844	8.7	2.75	24.24	60	5917	60.9	51.39	69.65
Indian	-	-	-	-	-	3	358	48.9	12.73	86.23
Bumiputera Sabah	72	8433	7.1	5.65	8.93	490	57747	48.7	42.88	54.62
Bumiputera Sarawak	0	0	0.0	0.00	0.00	7	867	44.8	17.17	76.06
Others	3	324	3.0	0.65	12.76	44	5154	47.8	35.73	60.04
BMI-for-age status (BAZ)										
Thinness (<-2sd)	3	310	3.4	1.02	10.95	30	3737	41.6	33.63	50.04
Normal (\geq -2sd - \leq +1sd)	69	8136	6.8	5.01	9.09	502	58418	48.6	42.17	55.10
Overweight (>+1sd - \leq +2sd)	13	1455	6.3	3.16	12.04	96	10930	47.1	39.79	54.48
Obese (>+2sd)	9	1044	7.9	3.54	16.65	58	6685	50.5	38.20	62.73
Height-for-age status (HAZ)										
Stunting (<-2sd)	22	2636	10.8	7.29	15.79	98	11578	47.6	38.61	56.66
Normal (\geq -2sd)	72	8308	5.9	4.29	8.02	588	68192	48.3	42.28	54.32

Table 3.7.7: Prevalence on the understanding of food ingredients among adolescents

Characteristic	Know only the lowest ingredient				
	Unweighted	Estimated	Prevalence	95% CI	
	Count	Population	(%)	Lower	Upper
SABAH	265	31317	18.9	16.56	21.42
Locality of School					
Urban	87	10815	17.6	14.89	20.69
Rural	178	20503	19.6	16.45	23.21
Sex					
Boys	136	16065	19.8	16.14	24.02
Girls	129	15253	18.0	14.58	22.00
Class					
Form 1	60	6971	19.2	15.60	23.36
Form 2	52	5919	18.0	11.63	26.90
Form 3	54	6633	19.9	15.33	25.42
Form 4	37	5578	17.7	12.48	24.40
Form 5	62	6216	19.5	13.86	26.67
Ethnicity					
Malay	46	5490	22.6	18.32	27.54
Chinese	11	1144	11.8	4.94	25.52
Indian	1	91	12.4	1.68	54.03
Bumiputera Sabah	189	22489	19.0	16.80	21.36
Bumiputera Sarawak	3	377	19.5	6.18	46.94
Others	15	1727	16.0	9.97	24.67
BMI-for-age status (BAZ)					
Thinness (<-2sd)	15	1764	19.6	11.71	31.04
Normal ($\geq -2sd$ - $\leq +1sd$)	189	22476	18.7	15.61	22.25
Overweight ($>+1sd$ - $\leq +2sd$)	40	4686	20.2	14.32	27.68
Obese ($>+2sd$)	20	2298	17.4	12.09	24.28
Height-for-age status (HAZ)					
Stunting (<-2sd)	48	5927	24.3	16.63	34.17
Normal ($\geq -2sd$)	216	25296	17.9	16.15	19.81

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 24Hour 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 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><u>Before Data Collection</u></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"> • Human resources are available: Field Supervisors, Team leaders, Research Assistants and drivers. • Manage transport: Vehicles • Manage survey instruments and relevant form • Manage lodging for data collectors <p><u>During Data Collection</u></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
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

SABAH

Liaison Officer

Ms. Jenny Jouti

Field Supervisors

1. Ms. Faizah Paiwai
2. Mr. Mohamad Fuad bin Mohamad Anuar

Nutritionists

1. Mr. Alvez Manuel
2. Ms. Nurul Ashiella binti Hassan
3. Ms. Chin Kim Ling
4. Ms. Maslia binti Naim
5. Ms. Noranisah binti Amat
6. Ms. Nur Aisyah binti Amu @ Abu
7. Ms. Mac Donna Matheus
8. Ms. Ling Swee Nian

Research Assistants

- | | |
|--|-------------------------------------|
| 1. Roshelva Salimun | 13. Steve Glantdenventur E Benjamin |
| 2. Ajun Chin | 14. Paul Beatrix Pernando Oppei |
| 3. Christabella Sandra Juslim | 15. Diana Guriana |
| 4. Awangku Mohd Shahfarol bin Pg Kamal | 16. Maxwell Guriana |
| 5. Zainal Abidin bin Diding | 17. Norsazweena binti Jerain |
| 6. Joan Sonny Limbowoi Binti Saimin | 18. Siti Ayuni binti Saplie |
| 7. Nurul Afifah binti Jamlin | 19. Frial Misuellyn Benjamin |
| 8. Mohd Afrizan Sahran | |
| 9. Ianddrian Charles Taimin | |
| 10. Mazlan bin Hj Abdul Halim Chin | |
| 11. Rasyidah Fathin binti Rahban | |
| 12. Faradillah binti Dahalan | |

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 மத்தியர் 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	

MODUL B :	CORAK PEMAKANAN
தொகுதி B :	உணவு பழக்கம்
Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.	
கட்டளை : சரியான விடையைத் தெர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில் கருமையாக்குக .	
B1	<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>
B2	<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>
B3	<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>
B4	<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 Peranakan Malay

- 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 அவ்வுணவை 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 அவ்வுணவை 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-லிருந்து மாலை 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-லிருந்து யரவு 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

Tinjauan Persekitaran Keluarga

- B13** Kebiasaannya, dari mana anda dapat makanan itu?
எங்கிருந்து அவ்வண்ணை 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 எத்தனை 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 யல்வண்ணை 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

Tinjauan Persekitaran Keluarga

- B21** Apakah bekalan minuman yang biasa dibawa ke sekolah? (Boleh pilih **SATU** atau **DUA** jawapan sahaja)
வழக்கமாக எவ்வகை நீரை பள்ளிக்கு எடுத்துச் செல்வீர்கள்? (ஒன்று அல்லது டிரண்டு 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 மற்றும்பள்ளி விடுதியில் உண்பது டதில் 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 டிரண்டு 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/ காற்போனெட்பானம்
D Makanan jeruk / ஊருகாய்
E Makanan ringan/rapu / துரித உணவு
F Keropok / சிப்ஸ்
G Aiskrim / பனிக்ரூல்
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?

	Aktiviti நடவடிக்கை	Tiada	1-2 kali முறை	3-4 kali முறை	5-6 kali முறை	7 kali atau lebih முறை
a	Lompat tali சிதிர்ப்பிங்	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 Fizikal

- 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 சி தேசன், 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 கல்விப் பரீட்சை

- C14** Berapa lamakah anda menonton televisyen dan/atau menggunakan komputer dan/atau bermain permainan video pada hari persekolahan?
எவ்வளவு நேரம் டிஜிட்டல் டிவி மற்றும் கணினிப் பயன்பாடுகள்?
- 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

MODUL D : PERSEPSI PENGURUSAN BERAT BADAN	
தொகுதி D : உடல் எடை கட்டுப்பாடு	
Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.	
கட்டளை : சரியான விடையைத் தெர்வு செய்து கொடுக்கப்பட்டுள்ள விடைத்தாளில்	
D1	<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>
D2	<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>
D3	<p>Sekiranya anda berhasrat untuk mengurangkan berat badan, 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
டீயிப்பு 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? எதனால் 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

MODUL E :	PENGAMBILAN SUPLEMEN
தொகுதி E :	விடமின் மற்றும் மாற்றுச்சத்துணவு உட்கொள்ளுதல்
Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.	
கட்டளை : சரியான விடையைத் தெர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில்	
E1	<p>Adakah anda ada mengambil sebarang suplemen vitamin / mineral? நீங்கள் விடமின் ஏதாவது உட்கொள்கிறீர்களா?</p> <p>A Ya / ஆம்</p> <p>B Tidak / இல்லை</p> <p>(Jika TIDAK, sila jawab TIDAK AMBIL SUPLEMEN di soalan E2, E3, dan E4) (இல்லை என்றால், விடமின் உட்கொள்ளவில்லை என்று E2, E3, மற்றும் E4 கேள்விகளில் விடையளிக்கவும்)</p>
E2	<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>
E3	<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>
E4	<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

MODUL F :	LABEL MAKANAN DAN PEMAKANAN (SEKOLAH MENENGAH SAHAJA)																		
தொகுதி F :	உணவு மற்றும் உணவு உல்கொள்ளும்முறையையும்குறிப்பிடுக. (படைநிலைப்பள்ளி மட்டும்)																		
Arahan : Pilih jawapan dan hitamkan pada kertas jawapan yang disediakan.																			
கட்டளை : சரியான விடையைத் தேர்வு செய்து கொடுக்கப்படுள்ள விடைத்தாளில்																			
F1	<p>Adakah anda membaca label makanan ketika membeli atau menerima makanan/minuman? ஒர் உணவுப் பொருளை வாங்குவதற்கு முன் நீங்கள் அதன் அடையாள அட்டையை படிப்பீர்களா?</p> <p>A. Ya, setiap kali (terus ke soalan F3 dan jawab hingga soalan F10) ஆம், ஒவ்வொருமுறையும் (கேள்வி F3- டல்பருந்து F10 வரை பதிலளிக்கவும்)</p> <p>B. Ya, kadang-kadang / ஆம், சில சமயத்தில்</p> <p>C. Tidak (silalah jawab soalan F2 dan terus ke soalan F5 hingga F8) டல்லை (கேள்வி F2 மற்றும் F5 பின் அதிலிருந்து தொடர்ந்து F8 வரை பதிலளிக்கவும்)</p>																		
F2	<p>Jika anda tidak membaca label makanan, nyatakan sebab-sebabnya? Anda boleh memilih lebih daripada satu jawapan. எனால் நீங்கள் அவ்வடையாள அட்டையை படிக்கமாதிர்கள்? ஒரு விடைக்கு மேல் தேர்வு செய்யலாம்.</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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F3	<p>Apakah jenis maklumat panel maklumat pemakanan yang anda baca? Anda boleh memilih lebih daripada satu jawapan. எந்த வகையான தகவலை நீங்கள் உணவு அடையாள அட்டையில் படித்தீர்கள்? ஒரு விடைக்கு மேல் தேர்வு செய்யலாம்</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 தகவல்கள்கொடுக்கப்பட்டுள்ளது. அதை படித்தப்பின் கொடுக்கப்பட்டுள்ளகூற்றுக்கள் சரி அல்லது பிழை என அடையாளம் காணுக.

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

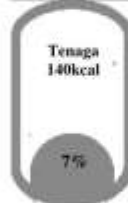
- F5** Jika saya minum 100ml minuman ini, ia membekalkan 56 kcal tenaga.
நான் 100ml குளிர்பானம் குடித்தால், எனக்கு 56 கலோரிச் சத்துகள் கிடைக்கும்.
- A Betul / சரி
B Salah / பிழை
C Tidak tahu / தெரியவில்லை
- F6** Jika saya minum satu kotak minuman ini, bermaksud saya telah mengambil 26.5 gram gula.
ஓர்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

MODUL G : PENGUKURAN ANTROPOMETRI தொகுதி G : ஆந்தரோபோமெற்றிக் அளவீடுகள்				
Arahan : Bahagian ini akan diisi oleh pelajar di dalam kertas jawapan yang disediakan. கட்டளை: கீழ்க்காணும் பத்திரத்தை நிரப்புக.				
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
Hari நாள்	Bulan மாதம்	Tahun ஆண்டு		
G2	Berat Badan உடல் எடை Berat 1 எடை 1 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> kg 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 Tinggi 1 உயரம் 1 <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> cm 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

MODULE A : PERSONAL INFORMATION			
A组：个人资料			
INSTRUCTION : Fill the student ID, date of birth and shade your answer on the answer sheet provided			
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	Student ID/ 学生编号	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	State 州属 Strata 区域 School Category 学校类别 School code 学校编号 Class 班级 Student 学生
A2	Date of birth/ 出生日期	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Day/日期 Month/月 Year/年份
A3	Gender/性别	A. Male/男 B. Female/女	
A4	Ethnicity/种族	A. Malay/马来人 D. Sabah indigenous/沙巴士著 B. Chinese.华人 E. Sarawak indigenous /沙撈越土著 C. Indian/印度人 F. Others/其他	
		Primary school/小学	Secondary school/中学
A5	Class/年级	A. Primary 4/4年级 B. Primary 5/5年级 C. Primary 6/6年级	D. Remove class/预备班 G. Secondary3/初中3 E. Secondary1/初中1 H. Secondary4/初中4 F. Secondary2/初中2 I. Secondary5/初中5
A6	Age/年龄	A. 10 year old/10岁 B. 11 year old /11岁 C. 12 year old /12岁	D. 13 year old /13岁 G. 16 year old /16岁 E. 14 year old / 14岁 H. 17 year old / 17岁 F. 15 year old / 15岁 I. 18 year old / 18岁

MODULE B: Meal pattern	
组 B: 饮食习惯	
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	
B1	<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>
B2	<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>
B3	<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>
B4	<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

Survei Kesihatan Persekitaran (SKPP)

MODULE C : PHYSICAL ACTIVITY						
C组：体能活动						
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						
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?						
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？						
	Activity/活动	Never/ 没有	1-2 times/ 1-2次	3-4 times/ 3-4次	5-6 times/ 5-6次	7 times or more/ 7次或以上
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

Ujian Pemakaian Hasil

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, dan E4
 (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, dan E8)
 (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）																			
<i>Instruction: Choose the answer and shade on the answer sheet provided</i> <i>指示：请在准备好的答案纸上划黑作答</i>																			
F1	<p>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？</p> <p>A. Yes, every time/每次都会</p> <p>B. Yes, sometimes/偶尔会</p> <p>C. No/不会</p>																		
<p>(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)</p> <p>(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)</p>																			
F2	<p>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</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <tr> <th colspan="2">Reasons for not reading food labels/ 没有阅读食品标签的原因</th> </tr> <tr> <td style="width: 50px;">A</td> <td>Small printing font/字体太小</td> </tr> <tr> <td>B</td> <td>Do not understand food labels/不明白</td> </tr> <tr> <td>C</td> <td>Not interesting/不感兴趣</td> </tr> <tr> <td>D</td> <td>Do not know the importance/不懂其重要性</td> </tr> <tr> <td>E</td> <td>No time/没有时间</td> </tr> <tr> <td>F</td> <td>Already know the information/已经知道相关资料</td> </tr> </table>	Reasons for not reading food labels/ 没有阅读食品标签的原因		A	Small printing font/字体太小	B	Do not understand food labels/不明白	C	Not interesting/不感兴趣	D	Do not know the importance/不懂其重要性	E	No time/没有时间	F	Already know the information/已经知道相关资料				
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F3	<p>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</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <tr> <th colspan="2">Nutrition fact information/营养资料</th> </tr> <tr> <td style="width: 50px;">A</td> <td>Energy content/日能</td> </tr> <tr> <td>B</td> <td>Carbohydrate/sugar content/碳水化合物/糖含量</td> </tr> <tr> <td>C</td> <td>Fat content/脂肪含量</td> </tr> <tr> <td>D</td> <td>Protein content/蛋白质含量</td> </tr> <tr> <td>E</td> <td>Salt/ sodium content/钠含量</td> </tr> <tr> <td>F</td> <td>Vitamin content/维生素含量</td> </tr> <tr> <td>G</td> <td>Mineral content/矿物质含量</td> </tr> <tr> <td>H</td> <td>Fiber/纤维</td> </tr> </table>	Nutrition fact information/营养资料		A	Energy content/日能	B	Carbohydrate/sugar content/碳水化合物/糖含量	C	Fat content/脂肪含量	D	Protein content/蛋白质含量	E	Salt/ sodium content/钠含量	F	Vitamin content/维生素含量	G	Mineral content/矿物质含量	H	Fiber/纤维
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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	
A	Expiry date/有限期
B	Dietary declaration/食品标签
C	Nutrition fact/营养资料
D	Halal logo/清真标志
E	List of Ingredients/成分
F	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

MODULE G : ANTHROPOMETRIC MEASUREMENT												
G组： 人体测量												
<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="display: inline-table; margin-right: 20px;"> <tr><td> </td><td> </td></tr> <tr><td>Day/日期</td></tr> </table> <table border="1" style="display: inline-table; margin-right: 20px;"> <tr><td> </td><td> </td></tr> <tr><td>Month/月份</td></tr> </table> <table border="1" style="display: inline-table;"> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td>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 <table border="1" style="display: inline-table; width: 60px;"> <tr><td> </td><td> </td><td> </td></tr> </table> : <table border="1" style="display: inline-table; width: 40px;"> <tr><td> </td></tr> </table> kg/公斤											
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G3	Body height/身高											
G3a	Height 1/身高1 <table border="1" style="display: inline-table; width: 60px;"> <tr><td> </td><td> </td><td> </td></tr> </table> . <table border="1" style="display: inline-table; width: 40px;"> <tr><td> </td></tr> </table> cm/厘米											
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IKU
INSTITUT KESIHATAN UMUM
KEMENTERIAN KESIHATAN MALAYSIA
Jalan Bangsar
50590 Kuala Lumpur



Secondary school Questionnaire Answer Sheet

**TINJAUAN PEMAKANAN REMAJA 2017
KERTAS JAWAPAN**

A1 ID PELAJAR						MODUL C																	
NEGERI	STRATA	KATEGORI SEKOLAH	KOD SEKOLAH	KELAS	PELAJAR	C1(a)	A	B	C	D	E	C1(n)	A	B	C	D	E	C9(a)	A	B	C	D	E
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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 berbahaya 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 menambahbaik 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 <input type="checkbox"/> 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 berkecualan, 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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